

The logo is a diamond-shaped emblem. The top half is a light gray triangle, and the bottom half is a dark gray triangle. A white horizontal bar with a black border runs through the center. The word "GROBET" is written in a bold, italicized, blue sans-serif font across this bar.

GROBET

FILE COMPANY

CATALOG NO. 56 B

GROBET

FILE COMPANY OF AMERICA, INC.

SWISS PRECISION **FILES**
AND THEIR USE

This book was designed to serve you as a guide to the most comprehensive line of Grobet-Swiss precision files and rifflers ever developed and manufactured to meet the requirements of modern industry. They are made in the fine tradition of superior craftsmanship that makes possible the correctness and preciseness of shape and accuracy of size, hardness and durability that has been the hallmark of Grobet-Swiss files since 1812.

Today, all Grobet-Swiss files are made of the finest chrome alloy steels that mean longer cutting life for file users. A combination of unsurpassed hand skills and advanced modern machinery is used to produce the finest files available anywhere.

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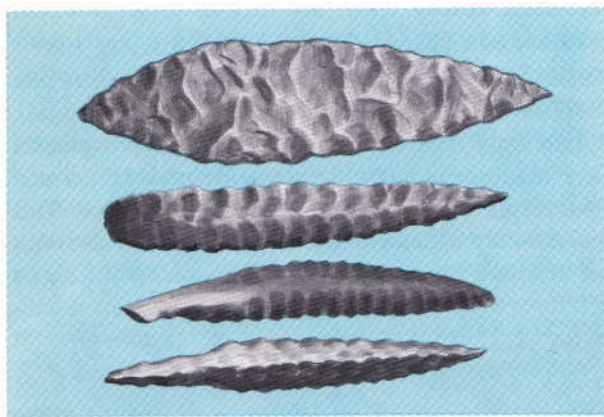
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file-making... one of man's oldest arts

The spade of the archeologists has turned up evidence that some primitive form of file may well have been the very first kind of cutting tool invented by man. It is quite likely that Stone Age man used a crude rasp even before he devised a rudimentary knife and a rough ax. Flint rasps are familiar finds in Stone Age diggings.



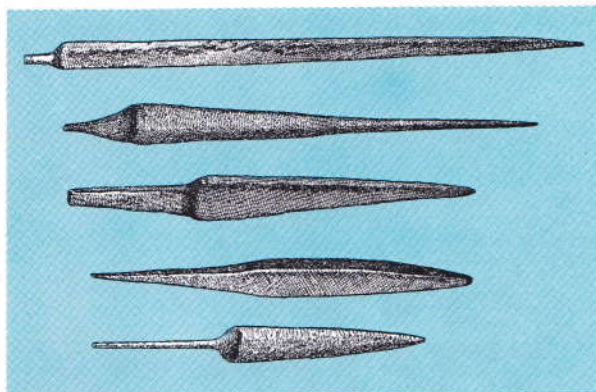
Early flint rasps from stone age diggings.

The earliest knives and axes probably came into being because man already had a tool with which to sharpen them — his crude file. These essential tools of early man, knives and axes, show the marks of sharpening. Their edges have been abraded with a harder, rough stone — the ancestor of all files.

The oldest known metallic file in existence today was un-earthed by an archeological expedition from the University of Pennsylvania on the Island of Crete

in the Mediterranean. This file, which is now on exhibit in the museum at Candia, is believed to be some 3400 years old. It has a rounded back and is very similar to a modern chisel cut half round file. The file measures approximately 3½" long, ⅜" wide and 7/32" thick.

The early Egyptians used files and rasps made of copper and bronze during the period between 3200 and 1800 B.C. The University of Pennsylvania has a fine example of one of these files. It came from the Ramesseum that was built during the 13 Century B. C. for the God Ammon by Rameses the 2nd.



Iron files typical of the Gallo-Roman period.

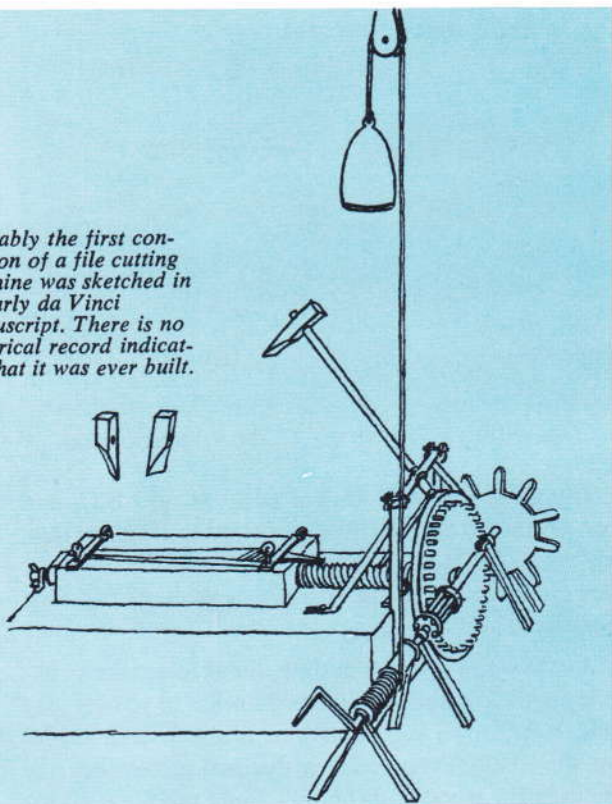
The Celts had iron files as early as 666 B.C. and iron files were popular tools among the Romans during the Gallo-Roman period. References to metallic files are found in Latin writings as early as the First Century B. C.

And even at so early a date, these files were probably crossed double-cut — very similar to present day files. It is known that the Romans also used a single-cut file. They even made a distinction between the file used for wood — *scobina* — and the file used for metal — *lima*. Not all of these files were flat. Examples exist of half-round and of square Roman files, types still in common use. Roman files, however, were usually cut only on one side, were no more than a half-inch wide, and were crude by comparison to later hand-made files from France and eventually Switzerland where the art became highly developed.

The regularity of the cut in a file was early recognized as a mark of excellence — of how well the file performed. The hand worker made his file by striking a hammer upon a chisel that was moved at each stroke in exactly the same manner and over exactly the same distance. This continuous and regular repetition of one particular operation in itself first suggested the idea of performing the work mechanically and automatically.

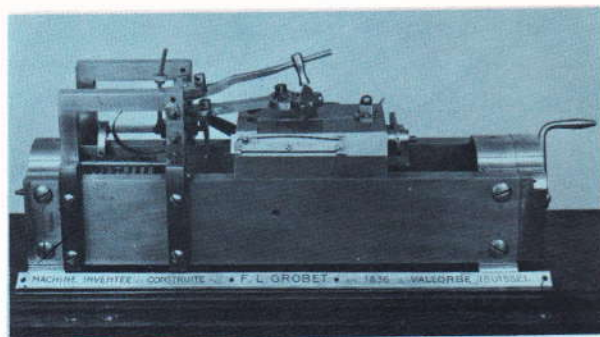
As early as 1490, this idea struck the great sculptor, painter, scientist and engineer Leonardo da Vinci. In his notebooks he sketched the first file-cutting machine. Just who was the first man to use a machine for cutting files remains a matter of conjecture. It may have been the French master locksmith Mathurin Jousse, who described a file-cutting machine in a book he published in 1627. Other sources say the first machine to actually cut files was made by another Frenchman, Chopitel, also a master locksmith, in 1750. After this date, there are records of a number of file-cutting machines.

Probably the first conception of a file cutting machine was sketched in an early da Vinci manuscript. There is no historical record indicating that it was ever built.



These early machines produced files that were satisfactory so far as most file-users of that day were concerned. However, most skilled artisans — such as the watchmakers, the silversmiths and the die-makers — continued to cut their own files by hand. Not only did they often require special shapes for their files, but they were precision workmen, craftsmen who demanded a finer degree of accuracy in the files they used than those made by these early machines could provide. Furthermore, they wanted each of their files to have an identical cut.

It was not until F. L. Grobet — a toolmaker who founded a company called Grobet Frères in Vallorbe, Switzerland, in 1812 — put the making of Swiss files on a production basis that files attained true precision and uniformity. He designed and built the first pre-



The original Grobet precision file cutting machine.

cision file-cutting machine in 1836. The types and cuts introduced by Grobet became standards for the industry because each file was uniform with the next, made to a degree of preciseness unknown until then.

Over the centuries, the metals from which files have been made also have undergone improvement. Mild steel replaced the bronze and iron of the first metallic files. Various makers introduced secret processes to carburize the file teeth making them harder than the base metal from which the file was made. Carbon steels, inherently harder than the original mild steels, brought annealing into use. This process softens the steel for tooth-cutting and tends to produce a more uniform internal structure in the metal. The finished file is then heat treated to harden the cutting surfaces. Today, tool steels are being replaced by chrome steels and other special alloys for files as these precision tools are now called upon to work alloys that are increasingly difficult to machine and shape to ever-closer tolerances.

It is only natural, as technological improvements were made in industry, that the file makers' art and engineering skill was called upon to keep pace. This was not only with metallurgical advances but also with the demands for new forms of files to meet the needs of improved industry practices. Production line manufacturing called for mechanized filing and brought about the development of filing machines.

In fact, the ever-closer tolerances demanded in the tooling for automated production and in the complex molds used by the expanding plastics industry require the finest products of the precision file maker's craftsmanship. Yet, outside the toolroom, new die-casting processes in the aerospace, and automotive industries still require precision hand filing on the production line to finish parts with close tolerances.

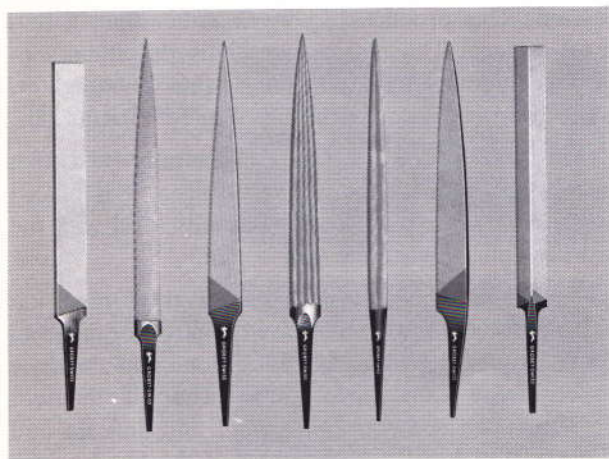
The art of file-making may be as old as the cave-man's crude flint rasp, but it is as modern as the intricate mold for a computer component being precisely finished with a Swiss precision die-maker's riffler.



what are swiss files?

The term "Swiss Precision Files" is used to designate a group of basic shapes and scale of cuts originally developed by F. L. Grobet in Switzerland over 150 years ago. These shapes and cuts are now widely imitated and generally known as Swiss pattern files. They are quite different from the other major group of files known as hardware, commercial or American pattern files.

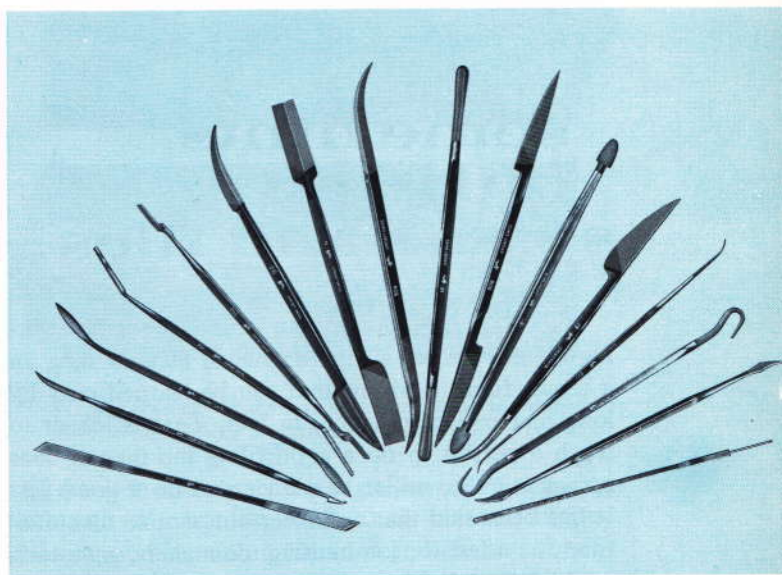
The form and cross-section of both Swiss precision and American pattern are often very similar in shape and use the same name although there is a difference in usage and application. An example of this is the warding file. A locksmith will use a Grobet-Swiss file to obtain the true precision smoothness required for a proper and accurate fit. For less precise commercial applications, American pattern files can be used.



Swiss files have smaller points with longer, thinner tapers. And, Swiss precision files are made to more exacting tolerance than American pattern files.

American pattern files are available in three cuts — based upon coarseness of teeth — Bastard, Second and Smooth cuts. Swiss precision files are made in much finer cuts ranging from No. 00 as the coarsest to No. 8, the finest. The scale of Swiss cuts is illustrated on Page 9 along with a comparison with the cuts of American pattern files.

Today, Swiss precision files and rifflers are made in over 700 shapes. Most of them are available in a considerable range of sizes. Swiss precision rifflers alone are available in over 600 variations.



Swiss precision rifflers may be shaped like button hooks or trowels and may have gentle or sharp curves with needle or bayonet points. Many of them are extremely narrow and delicate while others are reasonably heavy. Each have different profiles and contours. They range in lengths from 6" to 12" and in cuts from No. 0 to No. 6. They are Die sinkers', Die makers' Silversmith's and Toolmaker's rifflers, so called because they were originally hand forged by these craftsmen. Others are designed for pattern making and cabinet work. Now, though the traditional names persist, rifflers are selected by contour, size and cut depending upon the job to be accomplished.

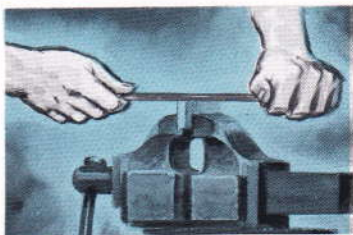
Swiss precision files and rifflers are superb finishing tools — on the production line or in the tool room. They are the favorites of tool and die makers, jewelers, instrument parts finishers, model makers and even home craftsmen. Precision finishing calls for a Swiss precision file and, there's a Grobet-Swiss file or riffler for every profile.



some hints on using swiss hand files

Hand filing, as one of man's oldest ways of working metal requires a high degree of manual skill. In a sense, filing is an art that can be learned only by long and patient practice. In fact, it takes longer to teach a person to do a good filing job than it does to run a lathe, miller or planer and do a good job. It has been said that a pioneer automobile manufacturer, as a test for job-hunting toolmakers, gave each applicant a few files and a piece of steel and set him to work filing a perfect cube. While there may be no truth in the story, it does point up the fact that hand filing is an important industrial skill from the die shop to the production line.

Correct method of holding a file for working thin stock. Several teeth should always contact work.



For draw filing, the file is held as shown and alternately pulled and pushed over the work.



Today, a craftsman is recognized by his ability to use a file correctly and efficiently. The touch of a file in the proper place can make all the difference in the world in fitting a critical joint. The skill or "feel" that the man with a file acquires from long experience comes from conforming to the correct procedures.

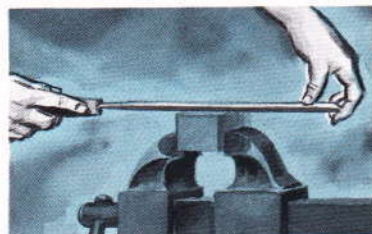
First of all, he must select the right file for the job. This is done according to the type of metal to be filed, the amount of material to be removed and the size and contour of the piece to be worked. Once the selection of the proper files has been made, the following basic principles should be observed:

The work piece must be properly supported at the correct working height.

The file must be held correctly with the cutting stroke properly guided.

The proper pressure must be applied during the cutting stroke.

The file must be clean.



For normal filing, the hands are placed on the file as illustrated for maximum pressure and average stock removal.



Heavy stock removal requires a change in the position of the left hand, as shown.

One of the prime causes of defective filing is the tendency of the novice to rock the file with a seesaw motion. This produces a convex rather than a flat, level surface. The reason for this is the attempt to remove too much material with each stroke. A lighter, more even pressure on the file usually corrects this.

Most material to be filed is generally held in a bench vise or work fixture. When used, it is placed so the top of the work piece is usually level with the worker's elbow when the arm is bent.

This practice is followed when average precision filing is to be done. Where rapid removal of material or rough, heavy filing is to be done, the work is usually set at a lower level and a coarser cut file used. However, when the work is small and delicate and the filing is done by the motion of the hand or the

hand and arm alone, the work is held at a level that permits closer scrutiny and enables a fine cut file or riffler to be guided more accurately. To keep the work piece from being marred, the jaws of the vise should be covered with pieces of soft metal, wood, plastic or leather.

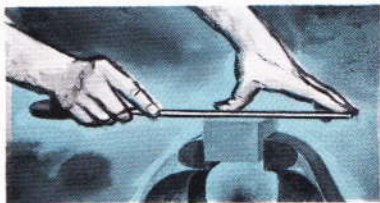
In general there are four basic types of filing operations, straight filing, draw-filing, lathe filing and fine precision filing. As lathe filing is an application for American pattern or long angle lathe files, it will not be discussed here. In straight filing, the file is pushed straight across the work while in draw filing the file is held at each end and under even pressure it is guided back and forth over the work in much the same manner as a spokeshave is used on wood. During this operation, the file is held perpendicular to the direction of motion. A word of caution, do not use a file that does not have a handle in place over the tang to protect the hand from possible injury.

For straight and draw-filing, the operator should stand comfortably with feet well apart so as to obtain a free swing from the shoulders, avoiding any separate wrist or elbow movement. The illustrations on these pages will show the proper hand positions for straight and draw-filing. The finishing and smoothing of metal in various narrow grooves and depressions of tools, dies, molds, jigs and fixtures calls for precision filing at its best. Small rifflers, used here, are held in much the same manner as a pen or pencil. In using larger sizes, the riffler is held in the hand with the index finger on the safe side to exert the proper cutting pressure. When necessary, on very fine and delicate work, the left hand is used to control the direction and in some cases the stroke of the riffler. With the large range of shapes, sizes and cuts now available in Grobet-Swiss precision files and rifflers, logic and experience will suggest the contour and profile most suited for the job.

For precision filing the tip is held by the thumb and index finger of the left hand for maximum control.

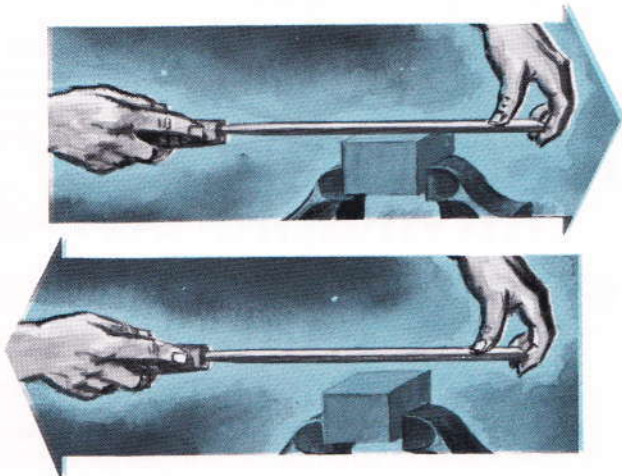


For flat filing the thumb and fingers of the left hand are stretched far apart for an even pressure.



In filing, "feel" is an important part of the operation. Too much or too little pressure can cause damage to the teeth of a Swiss precision file. Only enough pressure should be applied on a file during its forward motion to keep it cutting throughout its entire stroke. The file should be lifted during the return stroke. "Feel" will vary with the metal being worked and only through constant practice can this be attained.

Too little pressure on the cutting stroke, especially when working with tool and chrome alloy steels, will quickly dull the teeth of the file. Too much pressure



To preserve the sharpness of teeth and to increase life the file should be raised on the return stroke.

will result in excess metal being removed and causing the teeth of the file to become pinned. Proper cleaning of files with a file card and chalk will help keep the finish of the work smooth and free of scratches. The chalk will also help keep chips from building up in the teeth of the file. Chalk and a wire brush can be used to remove oil or grease from a file.

Just as important as proper use in prolonging its life, is the proper care of a file. Files should be kept mounted on a rack or with their tangs placed in a row of holes drilled into a block of wood. Don't just toss them into a drawer or in a pile on the back of a bench. If you do, you will damage their fine, keen-cutting teeth. And, keep your files in a dry atmosphere to avoid the possibility of rust. If a file becomes rusty, the teeth crumble away into a fine dust.

No file should be used without a handle. These handles must be mounted on the tangs properly. Never hammer or pound the point of a file to seat the tang in a handle. After the right size handle is selected, slip it over the tang and gently force the file into the hole as far as possible. Then either tap the handle on the bench or holding the handle, tap it with a mallet until the file is firmly secured.



how to select the proper swiss precision file for the job

What is the proper file to use for the job? Naturally, the answer to this question is dependent upon the job itself, the material to be filed and the method of filing. It may require the finishing of a flat surface; a curved surface, either convex or concave; an edge;

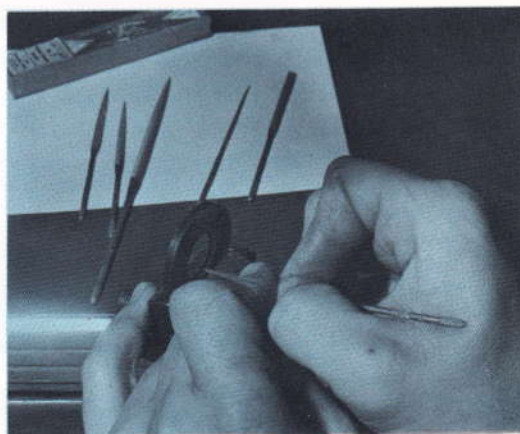
a rectangular hole, slot or notch; a square or circular hole. Each configuration calls for a different type of file or riffler as shown in the accompanying File Finding Chart. This chart indicates the tool that experience has proved to be the best for the job.

There is more to the problem of file selection than shape alone. To remove the proper amount of material and to obtain the required finish calls for the selection of a file or riffler with the correct cut. Here, the type and form of the material to be worked is the determining factor in the cut to be used. In general, for rapid removal of stock a coarse No. 00 cut file might be indicated while working on narrow surfaces would require a No. 2 cut file and final finishing operations might call for a No. 4 cut file or riffler. At best, this will serve only as a guide post to picking a file by shape, size and cut. In the final analysis, experience and common sense will be the basis for the selection.

Because of the wide range of shapes, sizes and cuts available in Swiss precision files, there is always one that is just right for the work requirements. And, Grobet-Swiss precision files enable the craftsman to attain the highest degree of accuracy and finest finish. Remember, there is a Grobet-Swiss file for every finish and profile.

SWISS PRECISION FILE FINDER

Name	Basic Application
Hand	Flat Surfaces
Pillar	Flat Surfaces — Slots
Half Round	Curved Surfaces — Corners — Holes
Crossing	Curved Surfaces — Junctions of Curved and Flat Surfaces — Corners — Holes
Three Square	Corners — Holes — Edges
Knife	Slots — Wedge Shaped Openings
Slitting	Corners — Slots
Warding	Slots
Equalling	Corners — Slots
Joint	Edges — Joints
Barrette	Flat Surfaces — Corners — Keyways — Dovetail Ways — Gear Teeth — De-burring
Cant	Corners
Round	Rounded Inside Corners — Holes
Square	Corners — Holes
Crochet	Rounded Corners — Slots — Flat Surfaces Junctions between Carved and Flat Surfaces
Pippin	Rounded Corners — Holes — "V" Slots
Checkering	Roughening Surfaces For Hand Grips etc.
Screw Head	Slots



Because of such a wide selection of Grobet-Swiss files there is never a compromise of shape, cut or size in the proper choice of a file or riffler for the job.

a short glossary of swiss file terms

AURIFORM FILE A die sinkers' file having a cross section that combines $\frac{1}{2}$ of a pippin file with $\frac{1}{2}$ of a crossing file.

BACK In a half round, barrette, cant or files of similar cross section, this is the convex side.

BARRETTE FILE Cut on wide flat face and safe on sides and back. Tapered in width and thickness.

BENCH FILING MACHINE FILE Parallel files of various cross sections for use in filing machines.

BLANK A steel forging from which a file is made. The basic shape of a file before teeth are cut or etched.

CANT FILE Triangular in cross section with one side wider than the other two. Cut on three sides and tapered.

CHECKERING FILE Rectangular in cross section and parallel in width and thickness. Teeth cut at 90° angle with edge. Safe on edges.

CHISEL CUT A method of cutting teeth into the surface of an annealed file blank by striking it with a series of repeated blows as the blank is moved beneath a chisel at a uniform speed. In the cutting operation, the chisel is placed obliquely to the length and is inclined to the surface of the file. This is done either by hand or machine. Generally used to produce files of No. 2 cut and coarser.

CROCHET FILE Rectangular in cross section with rounded edges. Cut on both faces and edges. Tapered in length and slightly tapered in thickness.

CROSSING FILE Oval cross section with same radius as half round files on one side and other side curved to a larger radius. Cut on both sides. Tapered in width and thickness.

CUT The number of teeth per inch, the degree of coarseness of a file's teeth, from No. 00 to No. 8 in Swiss precision files. Also used to describe the type of file such as single cut or double cut etc.

DIE MAKERS' RIFFLERS Various cross sectional shapes. Teeth cut on a small area of each end leaving a long middle portion as a handle. The cut ends are of various designs. Length is overall. Originally designed and hand forged by die makers for their specific purposes now a generic term for this particular group of rifflers.

DIE SINKERS' FILES A group of files of various cross sections designed for use by die sinkers and tool makers. Tapered in width and thickness.

DIE SINKERS' RIFFLERS See Die Makers' Rifflers. This group of rifflers has smaller cross sectional shapes.

DOUBLE CUT The arrangement of file teeth formed by two series of cuts. The first is the overcut which is followed by the upcut at an angle to the overcut.

EDGE The narrow cross section or side of a file.

EQUALLING FILE Thin rectangular cross section, parallel in width and thickness and cut on both faces and edges.

ESCAPEMENT FILE Also called Square Handled Needle Files. A group of files of various cross sectioned shapes with a length of cut varying from $\frac{3}{4}$ to $2\frac{1}{2}$ " and long square handles. Widely used by jewelers, watch makers, die makers, and fine mechanics.

ETCHED CUT A method of cutting teeth into the surface of a file blank by drawing an etching tool, under sustained pressure, obliquely across an annealed file blank in a series of cuts. This may be done either by hand or machine. This method of cutting is used where it is necessary to retain the true cross section of a file. Generally used to manufacture files finer than a No. 2 cut.

FACE The working surface of a file upon which teeth are cut.

FILING BLOCK A block of wood, soft metal or other material used to protect the material being filed from damage from the jaws of a vise or other holding device. It may contain a series of grooves to hold work securely.

FLAT FILE Also called a Warding File. A form of escapement or square handled needle file. Parallel in thickness. Cut on four sides, tapered in width.

HANDLE A wood or plastic piece that is placed over the tang of a file to protect the hand of the user.

HALF ROUND FILE A cross section that is flat on one side and has a radius (not half circle) on the other side. Cut on both sides. Width and thickness taper.

HALF ROUND SLIM FILE Also called Ring Files. Same as half round except thinner in width.

HEEL The end of the file at a location where the body ends and the taper leading into the tang begins. Also called the shoulder.

JOINT FILE, ROUND EDGE Rectangular cross section with rounded edges. Cut on edges only. Parallel in width and thickness.

JOINT FILE, SQUARE EDGE Rectangular cross section. Cut on edges only. Parallel in thickness and width.

KNIFE FILE Knife shaped cross section that is tapered in width and thickness. Edge has same thickness from point to shoulder.

LENGTH OF CUT The length of a file measured between the shoulder or heel and the point.

LOZENGE FILE Diamond shaped cross section parallel in width and thickness.

MACHINE FILE A file made specifically for use in a filing machine. Various cross sectional shapes. Parallel in width and thickness.

NEEDLE FILE, SQUARE HANDLED Also called an escapement file. A group of files of various cross sectional shapes with a length of cut varying between $\frac{3}{4}$ " and $2\frac{1}{2}$ " and long square handle.

NEEDLE FILE, ROUND HANDLED A group of files of various cross sections with a knurled round handle. Knurling gives the file a positive, non-slip grip for precision filing.

OVAL FILE An oval cross section tapering in width and thickness.

OVERCUT The first of a series of cuts in a double cut file. Its function is to act as a chip breaker. The second or upcut is made over this cut.

PARALLEL MACHINE FILE A group of parallel files of varying cross sectional shapes made specifically for use in reciprocating filing machines.

PARALLEL ROUND FILE A round cross section parallel in width.

PARALLEL SQUARE FILE A square cross section parallel in width and thickness.

PILLAR FILE A rectangular cross section with thickness greater relative to width, than in other types. Cut on face or flat sides only. Parallel in width, tapered in thickness. Also demi-narrow, narrow and extra narrow widths.

PIN OR PINNING The tendency of small particles of materials to fill or clog the gullets between the teeth of a file. When the teeth become clogged the file causes scratches on the work. When this occurs, the file is pinned.

PIPPIN FILE A section that combines the cross section of a round file with that of an equaling file. Tapered in thickness and width.

POINT The front end of a file as contrasted with the tang end.

POINTED BACK BARRETTE FILE A triangular cross section with one side wider than the other two sides cut on wide or face side only tapered in width and length.

RASP CUT A cut used on wood rifflers that is made by a punch raising a series of individual cutting teeth.

RIFFLERS From the German riefeln, to channel, chauffer, flute or groove. Originally used and hand forged by die sinkers, die makers, silversmiths and other skilled artisans in shapes and cross sections appropriate to their work. Teeth are cut on small areas on each end that can be shaped like everything from trowels to button hooks. A long middle portion serves as a handle.

RING FILE Also called a half round slim file.

ROUND FILE Round in cross section tapered in width.

ROUNDING OFF FILE An escapement or square handle needle file half round in cross section. Cut on flat side. Parallel in width.

SAFE The side or edge of a file that has no teeth cut in it so as not to mar a work surface that does not require filing.

SCREW HEAD FILE A narrow diamond shaped section with short bevels to form sharp edges. Cut on beveled edges, safe on flat sides. Parallel in width and thickness.

SECTION The cross section or end view of a file if it were cut squarely at the place of greatest width and thickness from the tang.

SILVERSMITH'S RIFFLERS A group of various cross sectioned shapes originally designed for use by silversmiths. Teeth are cut on small areas of each end leaving a long middle portion as a handle. The cut ends are of varied designs.

SINGLE CUT The teeth formed on a file by a single series of cuts.

SLITTING FILE A flat diamond shaped cross section. Cut on all sides. Parallel in width and thickness.

SQUARE FILE Square in cross section. Cut on all sides. Tapered.

SWISS PATTERN FILES Files made to the same shape and cut as the files originated by F. L. Grobet in Switzerland over 150 years ago. Made in cuts from No 00 to No. 6.

SWISS PRECISION FILES The original Grobet-Swiss files made in hundreds of sizes and shapes and in cuts from No. 00 to No. 8. Made to more exacting measurements and much finer cuts than American pattern files.

TANG The Part of the file that tapers from the shoulder that is intended to be fitted with a handle.

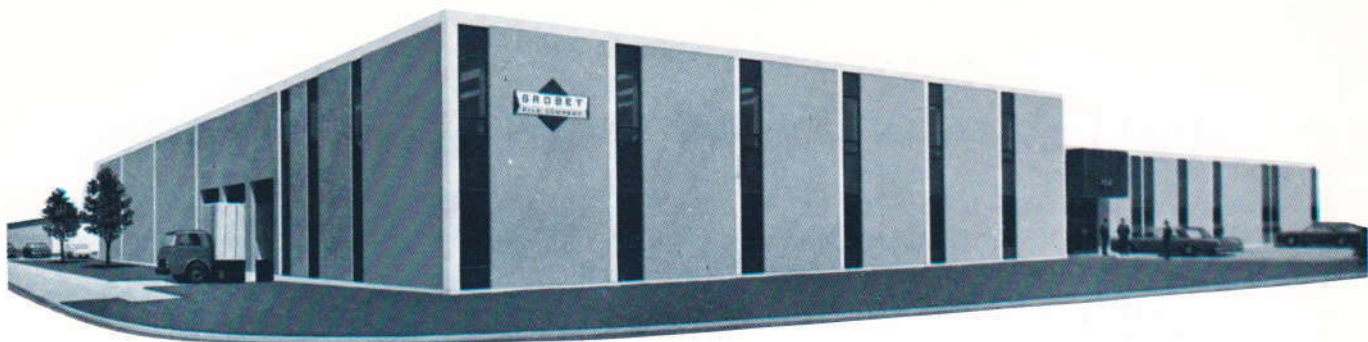
THREE SQUARE FILES Equilaterally triangular in cross section. Cut on all sides with sharp corners. Tapered.

TOOL MAKERS' RIFFLERS Various cross sectional shapes with teeth cut on a small area at each end leaving a long middle portion as a handle. The cut ends are of various designs to meet the needs of tool makers.

UPCUT The second series of teeth cut in double cut files made over the first series of cuts called the overcut. This cut is made of an angle to the overcut.

WARDING FILE A rectangular cross section with teeth cut on all sides up to $4\frac{1}{2}$ " in length and on 3 sides with one safe edge on files $6\frac{1}{2}$ " and longer. Tapered in width, parallel in thickness.

WOOD RIFFLERS Various cross sectional shapes cut with rasp teeth on both ends leaving a long middle portion as a handle Used by cabinet makers and pattern makers.



a few things you should know about GROBET-SWISS PRECISION FILES

Swiss precision files have been defined and their use discussed on preceding pages. Here are a few things worth knowing about original Grobet-Swiss Precision Files — the things that set them apart from other Swiss pattern files which imitate some of the shapes and cuts from among the more than 2,200 types, sizes and cuts made by Grobet.

When F. L. Grobet went into business in 1812, he initiated the standardization of shapes and cuts for Swiss precision files. All Swiss precision files were thus developed and established over 150 years ago by Grobet.

Grobet-Swiss continues to maintain its position of leadership in Swiss precision file making with additions and refinements that meet the needs of modern technologies.

The tradition of craftsmanship and precision that began in Vallorbe, Switzerland, so long ago continues to guide the making of Grobet-Swiss Precision Files. Grobet's first precision file-cutting machine was the progenitor of machines of advanced design which cut today's files with superb accuracy. The machines, good as they are, do not do all of the work however. The old hand skills, the meticulous work of artisans, are still employed in making Grobet-Swiss Precision Files.

This combination of specially developed machines and world-renowned hand craftsmanship produces Swiss precision files that are unsurpassed for precise accuracy of shape and size, and for hardness and

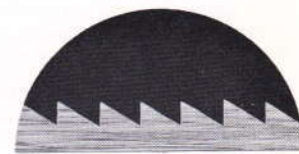
durability. But exactly how and why do these machines and skills produce the best files available anywhere in the world?

To begin with, every Grobet-Swiss Precision File is made of tough chrome alloy steel. This means your Grobet-Swiss file lasts longer — and works better throughout its long life.

The shape of the cuts on a Grobet-Swiss file and the cutting angles of the file teeth are scientifically designed. This, too, means your Grobet-Swiss file lasts longer — and works faster throughout its long life.



Micrograph of an ordinary file after 10,000 strokes.



Micrograph of a Grobet-Swiss file after 10,000 strokes.

Heat treatment — the hardening of metals — is in itself an ancient art, once handed down as a closely held secret from father to son. Again the cumulative experience of over 150 years provides Grobet-Swiss with a unique fund of knowledge in tempering file steel. This, once more, means your Grobet-Swiss file lasts longer — and works faster and better throughout its long life.

Finally, each Grobet-Swiss file is critically inspected and tested. If the tiniest imperfection is discovered, the file is scrapped. You can be sure that your Grobet-Swiss file is a perfect file.

A die maker said that he learned of Grobet's reputation for Swiss precision files from his grandfather long ago. Today, Grobet-Swiss precision files are the best that have been made in 150 years — the best files that you can buy. And remember —

There's a Grobet-Swiss file or riffler for every profile.



File Steel, Annealed.

File Steel, Hardened.

how to order

GROBET-SWISS PRECISION FILES

To order always specify quantity and code number. A complete description of the file, specifying style, length, width, thickness and cut, is not necessary if the proper code number is used. When in doubt, please include a complete description.

INSTRUCTION A: To construct the code number, use the code letters following the file name and add length and cut, in that order. Substitute 2Z for 00 and Z for 0.

Example: ZH62Z = Hand File, 6", cut 00.

ZXP61 = Pillar Checkering file, 6", cut 1.

INSTRUCTION C: To construct the code number, use the code letters under the file name and add the cut. Substitute 2Z for 00 and Z for 0.

Example: ZZFZ = Half Round Escapement File, cut 0.


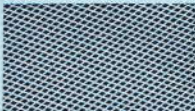



ZZR6 = Round Escapement file, cut 6.





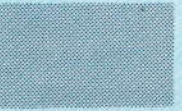



- The standard scale of swiss precision file cuts is explained below, as well as a comparison with American pattern file cuts.
- All weights given are approximate to the nearest ¼ pound.

SCALE OF CUTS

The scale of cuts for Swiss precision files as well as the basic shapes were developed by Grobet over 150 years ago. Additions and refinements have been made to meet the most exacting requirements of modern technologies. Here is the scale of cuts for Grobet-Swiss Precision Files:

					
Teeth per inch (upcut)	30	38	51	64	79
Files 10" and over in length	00	0	1	2	3
Files 4" to 8" in length		00	0	1	2
Files 3" in length			00	0	1
Escapement Files				0	
Needle Files 4" to 7¾"				0	
Regular Riffles				0	

						
Teeth per inch (upcut)	97	117	142	173	213	295
Files 10" and over in length	4		6			
Files 4" to 8" in length	3	4		6		
Files 3" in length	2	3	4		6	
Escapement Files	2	3	4		6	8
Needle Files 4" to 7¾"	2	3	4		6	
Regular Riffles	2	3	4		6	

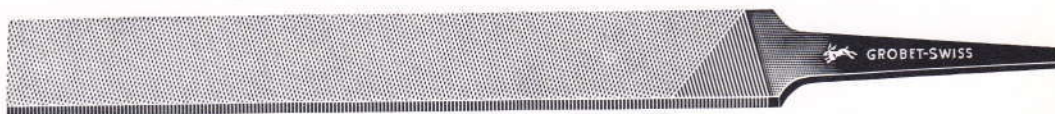
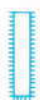
Here is a table comparing Swiss cuts with American Pattern cuts:

SWISS PATTERN..... No. 00..... No. 0..... No. 2

AMERICAN PATTERN..... Bastard..... Second Cut..... Smooth Cut

There is no equivalent in American Pattern Files for Swiss Pattern cuts numbered from No. 4 to No. 8.

To Order: See instruction A, page 9



HAND FILES —Code: ZH

A general purpose file used primarily for working on flat surfaces. Finer cuts are used for precision finishing. Parallel in width. Tapered in thickness to make possible perfectly flat filing.

Lengths Available in These Cuts

Length 4" 0,2,4	Length 8" 00,0,1,2,4,6
6" 00,0,1,2,3,4,6	10" 00,0,2,4
	12" 00,0,2

Length of cut:	4"	6"	8"	10"	12"
Width:	1 ¹ / ₃₂ "	3 ¹ / ₄ "	2 ⁹ / ₃₂ "	1"	1 ⁷ / ₁₆ "
Thickness:	1 ¹ / ₈ "	5 ¹ / ₃₂ "	3 ¹ / ₁₆ "	1 ¹ / ₄ "	5 ¹ / ₁₆ "
Lbs. per doz:	1	2 ³ / ₄	4 ¹ / ₂	8 ¹ / ₄	14 ¹ / ₂



REGULAR PILLAR FILES —Code: ZP

A general purpose file used primarily for working on flat surfaces. Because this group of files is available in various widths, they are adaptable for filing in slots, keyways, splines and similar applications. While parallel in width they are tapered in thickness to make possible perfectly flat filing.

Lengths Available in These Cuts

Length 3" 0,2	Length 8" 00,0,1,2,3,4
4" 00,0,1,2,4,6	10" 00,0,2
6" 00,0,1,2,3,4,6,8	12" 00,0

Length of Cut:	3"	4"	6"	8"	10"	12"
Width:	7 ¹ / ₃₂ "	3 ¹ / ₈ "	1 ¹ / ₂ "	1 ⁹ / ₃₂ "	2 ³ / ₃₂ "	2 ⁹ / ₃₂ "
Thickness:	3 ¹ / ₃₂ "	1 ¹ / ₈ "	1 ¹ / ₆₄ "	1 ³ / ₆₄ "	5 ¹ / ₆₄ "	9 ¹ / ₃₂ "
Lbs. per doz:	1 ¹ / ₂	1 ¹ / ₂	1 ³ / ₄	2 ³ / ₄	5	7 ³ / ₄



DEMI-NARROW PILLAR FILES —Code: ZPD

Lengths Available in These Cuts

Length 4" 0,2	Length 8" 00,0,2
6" 00,0,1,2,4	

Length of Cut:	4"	6"	8"
Width:	1 ¹ / ₄ "	3 ¹ / ₈ "	1 ¹ / ₃₂ "
Thickness:	7 ¹ / ₆₄ "	5 ¹ / ₃₂ "	3 ¹ / ₁₆ "
Lbs. per doz:	1 ¹ / ₂	1 ¹ / ₄	3 ¹ / ₄



NARROW PILLAR FILES —Code: ZPN

Lengths Available in These Cuts

Length 4" 00,0,1,2,4	Length 8" 00,0,1,2,4
6" 00,0,1,2,4,6	10" 00,0,2

Length of Cut:	4"	6"	8"	10"
Width:	3 ¹ / ₁₆ "	1 ¹ / ₄ "	1 ¹ / ₃₂ "	2 ³ / ₆₄ "
Thickness:	3 ¹ / ₃₂ "	3 ¹ / ₆₄ "	1 ¹ / ₆₄ "	3 ¹ / ₁₆ "
Lbs. per doz:	1 ¹ / ₂	3 ¹ / ₄	1 ¹ / ₂	2 ¹ / ₄



EXTRA NARROW PILLAR FILES —Code: ZPE

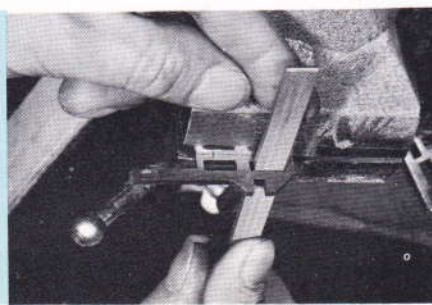
Lengths Available in These Cuts

Length 3" 0,2	Length 8" 00,0,1,2,4
4" 00,0,1,2,4	10" 00,0,2
6" 00,0,1,2,4,6	

Length of Cut:	3"	4"	6"	8"	10"
Width:	1 ¹ / ₈ "	5 ¹ / ₃₂ "	1 ³ / ₆₄ "	3 ¹ / ₃₂ "	1 ¹ / ₃₂ "
Thickness:	3 ¹ / ₆₄ "	3 ¹ / ₆₄ "	1 ¹ / ₈ "	3 ¹ / ₆₄ "	1 ¹ / ₆₄ "
Lbs. per doz:	1 ¹ / ₈	1 ¹ / ₄	1 ¹ / ₂	1 ¹ / ₈	2

Pillar Files are also made in the following special width: Cut 2 Length of cut: 6" Width: 1¹/₈" Code: ZPS62E

An adding machine shock absorber stop slide, stamped from SAE 1010 cold rolled steel, requires expert hand filing to obtain proper finish. An "O" cut pillar file is used to efficiently and quickly remove rough edges left by the press operation. Grobet-Swiss precision files for industry assure top jobs on operations of this type.



SWISS PRECISION FILES

To Order: See instruction A, page 9



KNIFE FILES —Code: ZK

Tapered in width and thickness but the knife edge has the same thickness from point to shoulder. The included angle of the sharp edge is approximately 10°. Generally used to file in a slot or wedge shape opening. Curved knife edge allows for easy filing in restricted areas.

Lengths Available in These Cuts

Length 3" 2
4" 00,0,1,2,4

Length 6" 00,0,1,2,4
8" 00,0,1,2

Length of Cut:	3"	4"	6"	8"
Width:	2 3/4"	1 5/32"	2 3/32"	7/8"
Thickness:	5/64"	1/8"	5/32"	1 3/64"
Lbs. per doz:	1/4	1/2	1 1/4	2 1/2



HALF ROUND FILES —Code: ZF

Primarily used for filing in curved surfaces and in corners. Gently tapered in width and thickness they are cut and useable right to the point. Chisel cut files are used for rapid removal of metal where contour and finish is not too important. Etched cuts are used where shape and finish must be held.

Lengths Available in These Cuts

Length 3" 00,0,2,4
4" 00,0,2,3,4
5" 0,2,3,4

Length 6" 00,0,1,2,3,4,6
8" 00,0,1,2,4
10" 00,0,2

Length of Cut:	3"	4"	5"	6"	8"	10"
Width:	5/16"	1 5/32"	3 3/64"	1 5/32"	1 3/16"	1"
Thickness:	3/32"	7/64"	5/32"	3/16"	1 3/64"	1 3/64"
Lbs. per doz:	1/4	3/4	1 1/8	1 3/4	3 3/4	6 3/4

Bold face indicates chisel cut. All others etched cut on round side only.



HALF ROUND SLIM OR RING FILES —Code: ZFS

For applications similar to half round files. Thinner in width and tapered in both width and thickness. The half round side is on a smaller radius. Cut and useable up to the point. Half round files and half round slim files are the most versatile of files. They are found on almost every bench.

Lengths Available in These Cuts

Length 6" 00,0,1,2,3,4,6

Length 7" 00,0,2,3
8" 00,0,2

Length of Cut:	6"	7"	8"
Width:	1 5/32"	1 5/32"	4 3/64"
Thickness:	9/64"	9/64"	3/16"
Lbs. per doz:	1 1/4	1 1/2	2 3/4

Bold face indicates chisel cut. All others etched cut on round side only.



CROSSING FILES —Code: ZC

Half round on two sides with one side having a larger radius than the other. Tapered in width and thickness. Cut and useable to the point. Used primarily for filing interior curved surfaces such as in dies. The double radius makes possible the filing at the junction of two curved surfaces or a straight and a curved surface.

Lengths Available in These Cuts

Length 4" 0,2,4
6" 0,2,3,4

Length 8" 0,2

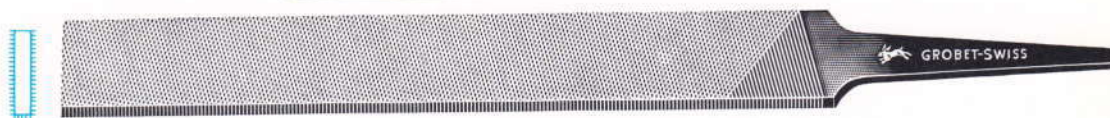
Length of Cut:	4"	6"	8"
Width:	1 5/32"	1 5/32"	1 3/16"
Thickness:	9/64"	3/16"	1 5/64"
Lbs. per doz:	3/4	1 3/4	3 3/4

Bold face indicates chisel cut. All others etched cut.



SWISS PRECISION FILES

To Order: See instruction A, page 9



HAND FILES —Code: ZH

A general purpose file used primarily for working on flat surfaces. Finer cuts are used for precision finishing. Parallel in width. Tapered in thickness to make possible perfectly flat filing.

Lengths Available in These Cuts

Length 4" 0,2,4
6" 00,0,1,2,3,4,6

Length 8" 00,0,1,2,4,6
10" 00,0,2,4
12" 00,0,2

Length of cut:	4"	6"	8"	10"	12"
Width:	1 1/32"	3/4"	2 9/32"	1"	1 3/16"
Thickness:	1/8"	5/32"	3/16"	1/4"	5/16"
Lbs. per doz:	1	2 3/4	4 1/2	8 1/4	14 1/2



REGULAR PILLAR FILES —Code: ZP

A general purpose file used primarily for working on flat surfaces. Because this group of files is available in various widths, they are adaptable for filing in slots, keyways, splines and similar applications. While parallel in width they are tapered in thickness to make possible perfectly flat filing.

Lengths Available in These Cuts

Length 3" 0,2
4" 00,0,1,2,4,6
6" 00,0,1,2,3,4,6,8

Length 8" 00,0,1,2,3,4
10" 00,0,2
12" 00,0

Length of Cut:	3"	4"	6"	8"	10"	12"
Width:	9/32"	3/8"	1/2"	1 1/32"	2 3/32"	2 3/32"
Thickness:	3/32"	1/8"	1 1/64"	1 3/64"	1 5/64"	9/32"
Lbs. per doz:	1/3	1/2	1 3/4	2 3/4	5	7 3/4



DEMI-NARROW PILLAR FILES —Code: ZPD

Lengths Available in These Cuts

Length 4" 0,2
6" 00,0,1,2,4

Length 8" 00,0,2

Length of Cut:	4"	6"	8"
Width:	1/4"	3/8"	1 1/32"
Thickness:	7/64"	5/32"	3/16"
Lbs. per doz:	1/2	1 1/4	3 1/4



NARROW PILLAR FILES —Code: ZPN

Lengths Available in These Cuts

Length 4" 00,0,1,2,4
6" 00,0,1,2,4,6

Length 8" 00,0,1,2,4
10" 00,0,2

Length of Cut:	4"	6"	8"	10"
Width:	3/16"	1/4"	1 1/32"	2 3/64"
Thickness:	3/32"	9/64"	1 1/64"	3/16"
Lbs. per doz:	1/3	3/4	1 1/2	2 1/4



EXTRA NARROW PILLAR FILES —Code: ZPE

Lengths Available in These Cuts

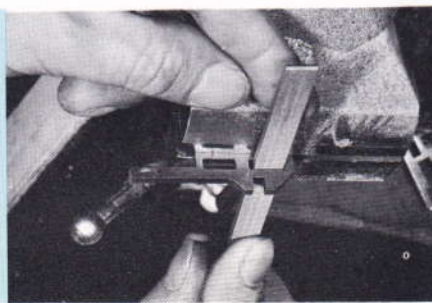
Length 3" 0,2
4" 00,0,1,2,4
6" 00,0,1,2,4,6

Length 8" 00,0,1,2,4
10" 00,0,2

Length of Cut:	3"	4"	6"	8"	10"
Width:	1/8"	5/32"	1 3/64"	9/32"	1 1/32"
Thickness:	5/64"	3/64"	1/8"	9/64"	1 1/64"
Lbs. per doz:	1/6	1/4	1/2	1 1/8	2

Pillar Files are also made in the following special width: Cut 2 Length of cut: 6" Width: 1/8" Code: ZPS62E

An adding machine shock absorber stop slide, stamped from SAE 1010 cold rolled steel, requires expert hand filing to obtain proper finish. An "O" cut pillar file is used to efficiently and quickly remove rough edges left by the press operation. Grobet-Swiss precision files for industry assure top jobs on operations of this type.



SWISS PRECISION FILES

To Order: See instruction A, page 9



KNIFE FILES —Code: ZK

Tapered in width and thickness but the knife edge has the same thickness from point to shoulder. The included angle of the sharp edge is approximately 10°. Generally used to file in a slot or wedge shape opening. Curved knife edge allows for easy filing in restricted areas.

Lengths Available in These Cuts

Length 3" 2	Length 6" 00,0,1,2,4
4" 00,0,1,2,4	8" 00,0,1,2

Length of Cut:	3"	4"	6"	8"
Width:	2 3/4"	1 5/32"	2 3/32"	7/8"
Thickness:	5/64"	1/8"	5/32"	1 3/64"
Lbs. per doz:	1/4	1/2	1 1/4	2 1/2



HALF ROUND FILES —Code: ZF

Primarily used for filing in curved surfaces and in corners. Gently tapered in width and thickness they are cut and useable right to the point. Chisel cut files are used for rapid removal of metal where contour and finish is not too important. Etched cuts are used where shape and finish must be held.

Lengths Available in These Cuts

Length 3" 00,0,2,4	Length 6" 00,0,1,2,3,4,6
4" 00,0,2,3,4	8" 00,0,1,2,4
5" 0,2,3,4	10" 00,0,2

Length of Cut:	3"	4"	5"	6"	8"	10"
Width:	3/16"	1 5/32"	3 3/64"	1 5/32"	1 3/16"	1"
Thickness:	3/32"	3/64"	5/32"	3/16"	1 3/64"	1 5/64"
Lbs. per doz:	1/4	3/4	1 1/8	1 3/4	3 3/4	6 3/4

Bold face indicates chisel cut. All others etched cut on round side only.



HALF ROUND SLIM OR RING FILES —Code: ZFS

For applications similar to half round files. Thinner in width and tapered in both width and thickness. The half round side is on a smaller radius. Cut and useable up to the point. Half round files and half round slim files are the most versatile of files. They are found on almost every bench.

Lengths Available in These Cuts

Length 6" 00,0,1,2,3,4,6	Length 7" 00,0,2,3
	8" 00,0,2

Length of Cut:	6"	7"	8"
Width:	1 5/32"	1 5/32"	4 5/64"
Thickness:	3/64"	3/64"	3/16"
Lbs. per doz:	1 1/4	1 1/2	2 3/4

Bold face indicates chisel cut. All others etched cut on round side only.



CROSSING FILES —Code: ZC

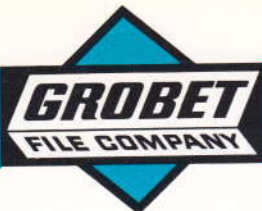
Half round on two sides with one side having a larger radius than the other. Tapered in width and thickness. Cut and useable to the point. Used primarily for filing interior curved surfaces such as in dies. The double radius makes possible the filing at the junction of two curved surfaces or a straight and a curved surface.

Lengths Available in These Cuts

Length 4" 0,2,4	Length 8" 0,2
6" 0,2,3,4	

Length of Cut:	4"	6"	8"
Width:	1 5/32"	1 5/32"	1 3/16"
Thickness:	3/64"	3/16"	1 5/64"
Lbs. per doz:	3/4	1 3/4	3 3/4

Bold face indicates chisel cut. All others etched cut.



SWISS PRECISION FILES

To Order: See instruction A, page 9



THREE SQUARE FILES —Code: ZT

Gradually tapered and cut and workable right to the point. Primary use is in filing corners and edges such as in extrusion dies where sharp edges must be held.

Lengths Available in These Cuts

Length 3" 0,2,4
4" 00,0,1,2,4,6

Length 6" 00,0,1,2,4
8" 00,0,1,2

Length of Cut:	3"	4"	6"	8"
Width:	1 3/4"	3/2"	3/4"	1/2"
Lbs. per doz:	1/4	1/2	1 1/2	3 1/4



THREE SQUARE SLIM FILES —Code: ZTS

Same application and use as three square files except thinner tapered shape permits working in smaller areas.

Cuts 0 and 2

Length of Cut: 6" Width: 5/16", Lbs. per doz: 1



ROUND EDGE JOINT FILES —Code: ZJR

Parallel in width and thickness, with rounded edges, these files are cut on the edges only. Used primarily to file slots and the bottom of grooves having rounded edges.

Special Ordering Instructions
In addition to length and cut,
add gauge number to code letters.
Example: ZJR-4-2-19 (ZJR4219)

Length of cut:	4"	4"	4"	4"	4"	4"	4"	4"	4"	4"
Cuts:	2	2	2	2	2	2	2	2	2	2
Approx. thickness:	.065"	.058"	.049"	.042"	.035"	.032"	.028"	.025"	.020"	.016"
Stubs Iron Wire Gauge:	16	17	18	19	20	21	22	23	25	27
Lbs. per doz:	1/2	1/2	1/2	1/2	1/4	1/4	1/4	1/4	1/4	1/4

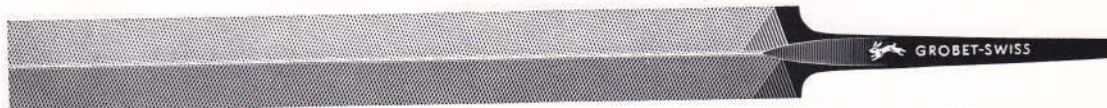


SQUARE EDGE JOINT FILES —Code: ZJS

Parallel in width and thickness with square edges, these files are cut on edges only. Used primarily to file slots and the bottom of grooves having square edges.

Special Ordering Instructions
In addition to length and cut,
add gauge number to code letters.
Example: ZJS-4-2-22 (ZJS4222)

Length of cut:	4"	4"
Cut:	1	2
Approx. thickness:	.049"	.028"
Stubs Iron Wire Gauge:	18	22
Lbs. per doz:	1/4	1/4



SLITTING FILES —Code: ZS

Parallel in width and thickness. While formerly used primarily for repairing and finishing gears their main use is now for fitting in slots too thin for knife files because of their finer edges.

Lengths Available in These Cuts

Length 4" 2
6" 0,2

Length of Cut:	4"	6"
Width:	3 3/4"	1 9/32"
Thickness:	5/64"	1/8"
Lbs. per doz:	1/2	1 1/4

SWISS PRECISION FILES

To Order: See instruction A, page 9

CROCHET FILES —Code: ZQ

Tapered in width and gradually tapered in thickness. Used in filing junctions between a flat and curved surface. Useful in developing slots with rounded edges in prototypes where machinery setup is too costly.

Lengths Available in These Cuts

Length 4" 00,0,2
6" 00,0,2,4

Length 8" 00,0,2

Bold face indicates chisel cut. All others etched out.

Length of Cut:	4"	6"	8"
Width:	$\frac{3}{16}$ "	$\frac{13}{32}$ "	$\frac{15}{32}$ "
Thickness:	$\frac{7}{32}$ "	$\frac{9}{64}$ "	$\frac{11}{64}$ "
Lbs. per doz:	$\frac{1}{2}$	1	2

CHECKERING FILES —Hand Code: ZXH —Pillar Code: ZXP

Parallel in width and gently tapered in thickness. Overcut is made parallel to file edges and up cut is made at 90° to overcut. Used by cutlers to put serrations in the edge of knives after regrinding and by gunsmiths to put a checkered area on a gun to make a firm hand grip. Also made in the form of a riffler for working in smaller areas. Grobet-Swiss Checkering Rifflers are available only through gunsmith supply houses.

Lengths Available in These Cuts

Hand
Length 6" 00,0,1,2
8" 00,0,1,2

Pillar
Length 6" 00, 0, 1, 2, 3, 4

Cuts no.:	00	0	1	2	3	4
Lines per inch.:	20	30	40	50	60	75

Hand	6"	8"
Length of Cut:	$\frac{3}{4}$ "	$\frac{25}{32}$ "
Width:	$\frac{5}{32}$ "	$\frac{3}{16}$ "
Thickness:	3	5
Lbs. per doz:		

Pillar	6"
Length of Cut:	$\frac{1}{2}$ "
Width:	$\frac{11}{64}$ "
Thickness:	2
Lbs. per doz:	

SCREW HEAD FILES —Code: (with tang) ZYT

Special Ordering Instructions.

In addition to length add thickness number to code letters.

Example: ZYT26 = 2" long No. 6 (.018")

Available in thickness ranging from No. 1 (thickest) to No. 8 (thinnest). Unless otherwise specified, No. 4 thickness will be furnished. Used for repairing the heads of screws and filling in fine slots. All files are supplied in the same cut.

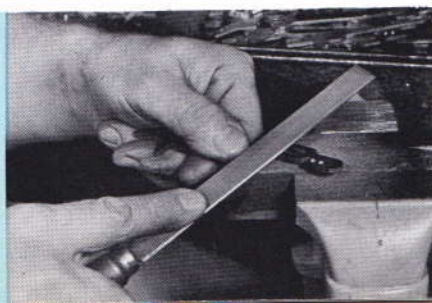
Lengths Available in These Thicknesses

Length 2" 6,8
3" 2,3,4,5,6,8
4" 1,2,3,4,6

Length of Cut:	2"	3"	4"
Regular Width:	$\frac{11}{32}$ "	$\frac{25}{64}$ "	$\frac{15}{32}$ "
Narrow Width:	$\frac{1}{4}$ "	—	—
Lbs. per doz:	$\frac{1}{10}$	$\frac{1}{10}$	$\frac{1}{6}$

Thickness No.	1	2	3	4	5	6	8
Thickness in inches:	.032	.028	.024	.022	.020	.018	.014

After the radius is milled in this cold rolled steel typewriter ribbon lift, it is necessary to remove the burrs. A Grobet-Swiss, "2" cut, equalling file is used for this purpose.





SWISS PRECISION FILES

To Order: See instruction A, page 9



SQUARE FILES —Code: ZL

Gradually tapered and cut on four sides. Cut and useable to the point. A general purpose file.

Lengths Available in These Cuts

Length 4" 00,0,1,2,4
6" 00,0,1,2,4

Length 8" 00,0,1,2
10" 00,2



Length of Cut:	4"	6"	8"	10"
Width:	$\frac{5}{32}$ "	$\frac{15}{64}$ "	$\frac{5}{16}$ "	$\frac{13}{32}$ "
Lbs. per doz:	$\frac{1}{2}$	1	$2\frac{1}{4}$	4



PARALLEL SQUARE FILES —Code: ZLP

Parallel in width and thickness and cut on four sides. For general purpose use.

Cuts 00,0 and 2

Length of Cut: 6" Width: $\frac{7}{16}$ " Lbs. per doz: $1\frac{1}{2}$



PIPPIN FILES —Code: ZU

Tapered in width and thickness. Chisel cuts for use in rapid removal of material, etched cuts for fine finishing. Combines the cross sections of the round with the crossing file and having the edge of a knife file for finishing the junction of two different curved surfaces and for opening slots when a "V" shape is required.

Lengths Available in These Cuts

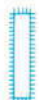
Length 4" 0,2,4

Length 6" 00,0,2,4
8" 00,0,2,4



Length of Cut:	4"	6"	8"
Width:	$\frac{7}{32}$ "	$2\frac{3}{64}$ "	$1\frac{5}{32}$ "
Thickness:	$\frac{3}{32}$ "	$\frac{5}{64}$ "	$1\frac{1}{64}$ "
Lbs. per doz:	$\frac{1}{2}$	1	2

Bold face indicates chisel cut. All others etched cut.



WARDING FILES —Code: ZW

Parallel in thickness and tapered in width. Used for precision removal of burrs after milling operations on office machines and other similar parts. Standard sizes are made to close tolerances.

Lengths Available in These Cuts

Length 3" 0,2
4" 00,0,2,4

Length 6" 00,0,2,4
8" 00,0,2



Length of Cut:	3"	4"	6"	8"
Width:	$2\frac{3}{64}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$\frac{7}{8}$ "
Thickness:	$\frac{1}{32}$ "	$\frac{3}{64}$ "	$\frac{5}{64}$ "	$\frac{7}{64}$ "
Lbs. per doz:	$\frac{1}{6}$	$\frac{1}{3}$	1	$2\frac{1}{4}$

The above files will be supplied unless one of the special thicknesses listed below is specified.

Special thickness listed below, available in minimum quantities, can be made to +0" —.0015" on special order.

WARDING FILES - SPECIAL THICKNESSES

Code:	Length of Cut	Cut No.	Width	Approx. Thickness	Stubs Iron Wire Gauge
ZW3Z23	3"	0	$2\frac{3}{64}$ "	.025"	23
ZW4Z21	4"	0	$\frac{1}{2}$ "	.032"	21
ZW6Z16	6"	0	$\frac{5}{8}$ "	.065"	16
ZW6Z18	6"	0	$\frac{5}{8}$ "	.049"	18
ZW6Z18	6"	2	$\frac{5}{8}$ "	.049"	18
ZW6Z19	6"	0	$\frac{5}{8}$ "	.042"	19
ZW6Z19	6"	2	$\frac{5}{8}$ "	.042"	19

SWISS PRECISION FILES

To Order: See instruction A, page 9



BARRETTE FILES

Cut flat side only —Code: ZB

Tapered in width and thickness. Used mainly for removal of burrs from key-ways, dovetail ways and similar sharp angled slots.

Lengths Available in These Cuts

Length 3" 00,0,2,4
4" 00,0,1,2,4

Length 6" 00,0,1,2,4
8" 00,0,2

Length of cut:	3"	4"	6"	8"
Width:	$2\frac{3}{64}$ "	$\frac{1}{2}$ "	$1\frac{1}{32}$ "	$\frac{7}{8}$ "
Thickness:	$\frac{3}{32}$ "	$\frac{1}{8}$ "	$\frac{3}{32}$ "	$1\frac{3}{64}$ "
Lbs. per doz:	$\frac{1}{4}$	$\frac{1}{2}$	$1\frac{1}{2}$	3



ROUND FILES

—Code: ZR

Gradually tapered. Cut and workable to the point. Used where it is necessary to enlarge a hole or round off a radius. Files with chisel cuts are used for rapid removal of material and etched cuts for fine finishing.

Lengths Available in These Cuts

Length 2" 8
3" 00,0,1,2,3,4
4" 00,0,1,2,4
5" 00,0,2,4

Length 6" 00,0,1,2,3,4,6
8" 00,0,1,2,4
10" 00,0,1,2

Length of Cut:	2"	3"	4"	5"	6"	8"	10"
Diameter:	$\frac{5}{64}$ "	$\frac{3}{32}$ "	$\frac{1}{2}$ "	$1\frac{1}{4}$ "	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$1\frac{3}{32}$ "
Lbs. per doz:	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{4}$	$\frac{1}{2}$	1	2	$3\frac{1}{2}$

Bold face indicates chisel cut. All others etched cut.



PARALLEL ROUND FILES

—Code: ZRP

Cut over the entire surface. Chisel cut files for rapid removal of material and etched cuts for fine finishing.

Cuts 00,0,2 and 4 unless otherwise specified.

Bold face indicates chisel cut. All others etched out.

	LENGTH	DIA.	LBS. per DOZ.		LENGTH	DIA.	LBS. per DOZ.
ZRP4(cut)B [only 0, 2 cuts]	4"	$1/16$ "		ZRP6(cut)G	6"	$5/32$ "	
ZRP4(cut)C [only 0 cut]	4"	$3/32$ "		ZRP6(cut)	6"	$*3/16$ "	
ZRP4(cut)	4"	$*1/8$ "	1/4	ZRP6(cut)Q [only 0, 2 cuts]	6"	$1/4$ "	1 3/4
ZRP6(cut)B [only 0, 2 cuts]	6"	$1/16$ "		ZRP8(cut) [only 0, 2 cuts]	8"	$*1/4$ "	
ZRP6(cut)C	6"	$3/32$ "		ZRP8(cut)Z [only 2 cut]	8"	$3/8$ "	2 1/2
ZRP6(cut)E	6"	$1/8$ "					

*This diameter will be supplied unless otherwise specified.



EQUALLING FILES

—Code: ZE

Parallel in width and thickness. Used primarily for filing slots and corners

Cuts 00, 0, 2 and 4 *

Length of Cut:	4"	6"	8"
Width:	$1\frac{1}{32}$ "	$\frac{1}{2}$ "	$2\frac{1}{32}$ "
Approx. Thickness:	$\frac{5}{64}$ "	$\frac{7}{64}$ "	$\frac{1}{8}$ "
Lbs. per doz:	$\frac{1}{2}$	$1\frac{1}{3}$	$2\frac{1}{4}$

*Not offered in 8" length of cut.

The above files will be supplied unless one of the special thicknesses listed below is specified.



EQUALLING FILES - SPECIAL THICKNESSES


Cuts 0, 2 and 4 unless otherwise specified.

Code:	Length of Cut	Width	Approx. Thickness	Stubbs Iron Wire Gauge	Code:	Length of Cut	Width	Approx. Thickness	Stubbs Iron Wire Gauge
ZE4(cut)18	4"	$\frac{1}{32}$ "	.049"	18	ZE4(cut)26	4"	$\frac{1}{32}$ "	.018"	26
ZE4(cut)20	4"	$\frac{1}{32}$ "	.035"	20	ZE4(cut)28	4"	$\frac{1}{32}$ "	.014"	28
ZE4(cut)21 (only 0, 2 cuts)	4"	$\frac{1}{32}$ "	.032"	21	ZE6(cut)14 (only 0, 2 cuts)	6"	$\frac{1}{2}$ "	.083"	14
ZE4(cut)22	4"	$\frac{1}{32}$ "	.028"	22	ZE6(cut)16 (only 0, 2 cuts)	6"	$\frac{1}{2}$ "	.065"	16
ZE4(cut)24 (only 2, 4 cuts)	4"	$\frac{1}{32}$ "	.022"	24	ZE6(cut)18	6"	$\frac{1}{2}$ "	.049"	18

To Order: See instruction C, page 9

Available in assorted sets of 12 — Code: **ZDRS** (cut)

Cuts 0 and 2 Length of cut: 3½" . . . wt. per doz. ¼ lb.

 **Lozenge Code: ZDRA**



 **Oval Code: ZDRO**



 **Square Code: ZDRL**




 **Round Code: ZDRR**



 **Three Square Code: ZDRT**



 **Crochet Code: ZDRQ**



 **Flat Code: ZDRH**




 **Auriform Code: ZDRX**



 **Half Round Code: ZDRF**



 **Pippin Code: ZDRU**



 **Knife Code: ZDRK**



 **Warding Code: ZDRW**





ESCAPEMENT FILES

OR SQUARE HANDLE NEEDLE FILES

Used in fine watchmaking, in finishing fine extrusion dies and for fine jewelry repair work and other similar work. Available in a wide assortment of shapes and cuts.

To Order: See instruction C, page 9

Length of cut varies according to shape from $1\frac{1}{16}$ " to $2\frac{1}{16}$ ", overall length $5\frac{1}{2}$ ", weight per dozen $\frac{1}{4}$ lb.
Cuts 0, 2, 3, 4, 6 and 8 unless otherwise specified.

Round
Code: ZZR



Available in all cuts.

Half Round
Code: ZZF



Available in all cuts.

Crossing
Code: ZZC



Available in all cuts.

Square
Code: ZZL



Available in all cuts.

Three Square
Code: ZZT



Available in all cuts.

Three Square
Slim and Short
Code: ZZTS



Available in cuts 0, 2, 4, 6 and 8 only.

Pillar
Code: ZZP



Available in cuts 0, 2, 4, 6 and 8 only.

Equalling
Code: ZZE



Available in cuts 0, 2, 3, 4 and 6 only.

Knife
Code: ZZK



Available in all cuts.

Barrette
Code: ZZB



Available in all cuts.

Barrette Parallel
Code: ZZBP



Available in cuts 0, 2, 4, 6 and 8 only.

Rounding Off
Code: ZZRO



Available in cuts 0, 2, 4 and 6 only.

Code: ZZSM(cut) — Assorted set of 12 for Mechanics — cuts 0, 2, 4, and 6: Round, Half Round, Crossing, Square, Three Square, Three Square Slim, Pillar, Equalling, Knife, Barrette, Barrette Parallel, Rounding Off.

Sets of escapement files are shipped in plastic boxes. See page 19 for illustration.

To Order: See instruction C, page 9











Used for applications similar to larger tang files. Handles are knurled to permit a positive sure grip in the hand so that fine precision filing can be accomplished without the file slipping and spoiling a workpiece. Used for production work on small and electronic parts.

Oval	Code: ZN6QO (6¼")	6¼" overall length available in cuts 0, 2 and 4. 4", 5½" and 7¾" overall lengths not available.
Round	Code: ZN4R (4") ZN5HR (5½") ZN6QR (6¼") ZN7TR (7¾")	4" overall length available in cuts 0, 2, 4 and 6. 5½" overall length available in cuts 00, 0, 2, 3, 4 and 6. 6¼" overall length available in cuts 00, 0, 1, 2, 3, 4 and 6. 7¾" overall length available in cuts 0, 2, and 4.
Square	Code: ZN4L (4") ZN5HL (5½") ZN6QL (6¼") ZN7TL (7¾")	4" and 5½" overall lengths available in cuts 0, 2, 4 and 6. 6¼" overall length available in cuts 00, 0, 1, 2, 3, 4 and 6. 7¾" overall length available in cuts 0, 2 and 4.
Three Square	Code: ZN4T (4") ZN5HT (5½") ZN6QT (6¼") ZN7TT (7¾")	4" overall length available in cuts 0, 2, 4 and 6. 5½" overall length available in cuts 00, 0, 2, 3, 4 and 6. 6¼" and 7¾" overall lengths available in cuts 00, 0, 1, 2, 3, 4 and 6.
Warding	Code: ZN4W (4") ZN5HW (5½") ZN6QW (6¼") ZN7TW (7¾")	4" overall length available in cuts 0, 2 and 4. 5½" overall length available in cuts 00, 0, 2, 4 and 6. 6¼" overall length available in cuts 00, 0, 2, 3, 4 and 6. 7¾" overall length available in cuts 0, 2 and 4.
Crochet	Code: ZN4Q (4") ZN5HQ (5½") ZN6QQ (6¼")	4", 5½" and 6¼" overall lengths available in cuts 0, 2 and 4. 7¾" overall length not available.
Knife	Code: ZN4K (4") ZN5HK (5½") ZN6QK (6¼") ZN7TK (7¾")	4" overall length available in cuts 0, 2 and 4. 5½" overall length available in cuts 00, 0, 2, 4 and 6. 6¼" overall length available in cuts 0, 2, 3, 4 and 6. 7¾" overall length available in cuts 0, 2 and 4.
Half Round	Code: ZN4F (4") ZN5HF (5½") ZN6QF (6¼") ZN7TF (7¾")	4" overall length available in cuts 0, 2, 4 and 6. 5½" overall length available in cuts 0, 2, 3, 4 and 6. 6¼" overall length available in cuts 00, 0, 1, 2, 3, 4 and 6. 7¾" overall length available in cuts 0, 1, 2, 3 and 4.
Marking	Code: ZN4M (4") ZN5HM (5½") ZN6QM (6¼")	4" overall length available in cuts 0, 2 and 4. 5½" and 6¼" overall lengths available in cuts 0, 2, 4 and 6. 7¾" overall length not available.
Crossing	Code: ZN4C (4") ZN5HC (5½") ZN6QC (6¼") ZN7TC (7¾")	4" overall length available in cuts 0, 2 and 4. 5½" overall length available in cuts 00, 0, 2, 4 and 6. 6¼" overall length available in cuts 0, 2, 4 and 6. 7¾" overall length available in cuts 0, 2 and 4.

with knurled round handles

To Order: See instruction C, page 9

Length overall	4"	5½"	6¼"	7¾"
Length of Cut	1¾"	2½"	3"	4⅞"
Lb. per doz.	⅓	¼	¼	½

		
Barrette	Code: ZN4B (4")	4" overall length available in cuts 0, 2, 4 and 6. 5½" overall length available in cuts 00, 0, 2, 3, 4 and 6. 6¼" and 7¾" overall lengths available in cuts 00, 0, 1, 2, 3, 4 and 6.
	ZN5HB (5½")	
	ZN6QB (6¼")	
	ZN7TB (7¾")	
		
Equalling	Code: ZN4E (4")	4" overall length available in cuts 0, 2, 4 and 6. 5½" overall length available in cuts 00, 0, 2, 4 and 6. 6¼" overall length available in cuts 00, 0, 1, 2, 3, 4 and 6. 7¾" overall length available in cuts 0, 2 and 4.
	ZN5HE (5½")	
	ZN6QE (6¼")	
	ZN7TE (7¾")	
		
Slitting	Code: ZN4S (4")	4" overall length available in cuts 0, 2 and 4. 5½" and 6¼" overall lengths available in cuts 0, 2, 4 and 6. 7¾" overall length not available.
	ZN5HS (5½")	
	ZN6QS (6¼")	
		
Round Edge Joint	Code: ZN4J (4")	4" overall length available in cut 0, 2 and 4. 5½" and 6¼" overall lengths available in cut 0, 2, 4 and 6. 7¾" overall length not available.
	ZN5HJ (5½")	
	ZN6QJ (6¼")	
		
Three Square Bent	Code: ZN6QTB (6¼")	Cuts 0, 2 and 4 Length overall: 6¼" (16 cm.) Length of cut: 3"

NEEDLE FILES WITH KNURLED HANDLES IN PLASTIC BOXES

These modern plastic cases hold one dozen assorted Needle Files in 5½" and 6¼" overall lengths. Other sizes are available in regular cardboard boxes.

The plastic case slides open and divides into two compartments convenient to bench use. Special plastic springs hold each file securely in position — they do not touch, become loose or drop out.

Assorted set of 12: Round, Square, Three Square, Warding, Knife, Half Round, Marking, Crossing, Barrette, Equalling, Slitting, Round Edge Joint available in the following overall lengths and cuts:

4" — 0, 2 and 4. 5½" and 6¼" — 0, 2, 4 and 6.

7¾" overall length file sets, available in cuts 0 and 2, consist of 2 each Round, Half Round and Three Square, 1 each Square, Warding, Knife, Crossing, Barrette and Equalling.

There's a Grobet-Swiss file for every profile

Code: ZN4ST	(cut) 4" length	Code: ZN6QST	(cut) 6¼" length
ZN5HST	(cut) 5½" length	ZN7TST	(cut) 7¾" length



PARALLEL MACHINE FILES - Type A and B

For Bench Filing Machines.

Cut on the downward stroke.

 THE COMPLETE ORDERING CODE NUMBERS
 ARE SHOWN FOR FILES ON THIS PAGE

Length of cut: 2 1/4" Length overall: 3 1/4"

 Type A Round Shank 1/4" dia. Cut 00
 Lb. per doz. 1/2

 Type B Round Shank: 1/8" dia. Cut 00 and 2
 Lb. per doz. 1/4


Code: **ZMAL2Z** (cut 00) 3/16" **SQUARE**

SQUARE 7/64" Code: **ZMBL2Z** (cut 00)
ZMBL2 (cut 2)



Code: **ZMAQ2Z** (cut 00) 1/4" x 3/64" **CROCHET**

PIPPIN 3/16" x 3/32" Code: **ZMBU2Z** (cut 00)
ZMBU2 (cut 2)



Code: **ZMAF2Z** (cut 00) 1/4" x 3/64" **HALF ROUND**
 (Not included in assorted set of 6)

HALF ROUND 1 3/64" x 3/64" Code: **ZMBF2Z** (cut 00)
ZMBF2 (cut 2)
 (Not included in assorted set of 6)



Code: **ZMAR2Z** (cut 00) 1/4" **ROUND**

ROUND 3/64" Code: **ZMBR2Z** (cut 00)
ZMBR2 (cut 2)



Code: **ZMAT2Z** (cut 00) 7/32" **THREE SQUARE**

THREE SQUARE 1/8" Code: **ZMBT2Z** (cut 00)
ZMBT2 (cut 2)



Code: **ZMAE2Z** (cut 00) 7/32" x 3/64" **EQUALLING**
 (Cut 4 sides)

EQUALLING 3/16" x 3/64" Code: **ZMBE2Z** (cut 00)
ZMBE2 (cut 2)



Code: **ZMAP2Z** (cut 00) 7/32" x 3/64" **PILLAR**
 (2 safe edges)

PILLAR 3/16" x 3/64" Code: **ZMBP2Z** (cut 00)
ZMBP2 (cut 2)

PARALLEL MACHINE FILES -TYPE X

Cut on the Downward Stroke

Cut 00

 Length of Cut: 3 1/2"
 Length overall: 4 3/4"

 Round Shank 3/16" dia.
 lb. per doz. 3/4


SQUARE
 3/16"
ZMXL2Z

OVAL



3/16" x 5/32"
ZMXO2Z

HALF ROUND



5/8" x 5/32"
ZMXF2Z

ROUND



3/16"
ZMXR2Z

THREE SQUARE



7/32"
ZMXT2Z

EQUALLING
 (Cut 4 sides)



3/16" x 1/8"
ZMXE2Z

Parallel Machine Files — Types A, B and X available in assorted sets of 6

Code: **ZMAS62Z** Type A Set (cut 00)
 Code: **ZMBS62Z** Type B Set (cut 00)

Code: **ZMBS62** Type B Set (cut 2)
 Code: **ZMXS62Z** Type X Set (cut 00)



PARALLEL MACHINE FILES / TYPE F

THE COMPLETE ORDERING CODE NUMBERS
ARE SHOWN FOR FILES ON THIS PAGE



Tension type for Acme, Ideal, High Speed and similar filing machines. Clamp ends of these tension type files are precision machined to assure accurate alignment.

Cut 00 (Bastard)

Cut 2 (Smooth)

WEIGHT PER DOZEN 4" AND 5" — ¼ LB. • 6" AND 8" — 1½ LBS.

LENGTH	FLAT	SQUARE	THREE SQUARE	ROUND	HALF ROUND	KNIFE	CROCHET
4" CUT 00 CUT 2		$\frac{3}{64}$ " ZMF172Z ZMF172	$\frac{3}{64}$ " ZMF332Z ZMF332	$\frac{3}{64}$ " ZMF652Z ZMF652			
4" CUT 00 CUT 2					$\frac{1}{16} \times \frac{1}{64}$ " ZMF812Z ZMF812		
4" CUT 00 CUT 2	$\frac{5}{64} \times \frac{3}{64}$ " ZMF12Z ZMF12	$\frac{5}{64}$ " ZMF182Z ZMF182	$\frac{5}{64}$ " ZMF342Z ZMF342	$\frac{5}{64}$ " ZMF662Z ZMF662	$\frac{5}{64} \times \frac{3}{64}$ " ZMF822Z ZMF822	$\frac{5}{64} \times \frac{3}{64}$ " ZMF1292Z ZMF1292	$\frac{3}{64} \times \frac{1}{64}$ " ZMF1452Z ZMF1452
4" CUT 00 CUT 2	$\frac{1}{8} \times \frac{1}{16}$ " ZMF22Z ZMF22					$\frac{1}{8} \times \frac{3}{64}$ " ZMF1302F ZMF1302	$\frac{1}{8} \times \frac{3}{64}$ " ZMF1462Z ZMF1462
5" CUT 00		$\frac{1}{8}$ "** ZMF222Z	$\frac{1}{8}$ "** ZMF382Z	$\frac{1}{8}$ "** ZMF702Z	$\frac{1}{8} \times \frac{5}{64}$ "** ZMF862Z		$\frac{1}{8} \times \frac{5}{64}$ "* ZMF1502Z
5" CUT 00	$\frac{5}{32} \times \frac{5}{64}$ "** ZMF62Z						
6" CUT 00 CUT 2		$\frac{5}{32}$ " ZMF232Z ZMF232	$\frac{5}{32}$ " ZMF392Z ZMF392		$\frac{5}{32} \times \frac{5}{64}$ " ZMF872Z ZMF872	$\frac{5}{32} \times \frac{5}{64}$ " ZMF1352Z ZMF1352	$\frac{5}{32} \times \frac{5}{64}$ " ZMF1512Z ZMF1512
6" CUT 00 CUT 2	$\frac{3}{16} \times \frac{5}{64}$ " ZMF72Z ZMF72						
5" CUT 00	$\frac{3}{16} \times \frac{1}{8}$ "* ZMF92Z		$\frac{3}{16}$ "** ZMF412Z		$\frac{3}{16} \times \frac{1}{8}$ "** ZMF892Z		
6" CUT 00 CUT 2	$\frac{5}{16} \times \frac{1}{8}$ " ZMF122Z ZMF122	$\frac{5}{16}$ " ZMF292Z ZMF292			$\frac{5}{16} \times \frac{1}{8}$ " ZMF922Z ZMF922		
8" CUT 00 CUT 2	$\frac{3}{8} \times \frac{3}{16}$ " ZMF162Z ZMF162						
5" CUT 00	$\frac{13}{32} \times \frac{1}{32}$ "** ZMF5012Z						
6" CUT 00	$\frac{5}{8} \times \frac{5}{64}$ "** ZMF5032Z						

*Cut 00 (Bastard) Only

All weights given are for one doz. files.



PARALLEL MACHINE FILES- Type A and B

For Bench Filing Machines.

Cut on the downward stroke.

THE COMPLETE ORDERING CODE NUMBERS
ARE SHOWN FOR FILES ON THIS PAGE

Length of cut: 2 1/4" Length overall: 3 1/4"

Type A Round Shank 1/4" dia. Cut 00
Lb. per doz. 1/2

Type B Round Shank: 1/8" dia. Cut 00 and 2
Lb. per doz. 1/4



Code: ZMAL2Z (cut 00)

3/16"

SQUARE



SQUARE

7/64"

Code: ZMBL2Z (cut 00)
ZMBL2 (cut 2)



Code: ZMAQ2Z (cut 00)

1/4" x 5/64"

CROCHET



PIPPIN

3/16" x 3/32"

Code: ZMBU2Z (cut 00)
ZMBU2 (cut 2)



Code: ZMAF2Z (cut 00)

1/4" x 5/64"

HALF ROUND

(Not included in assorted set of 6)



HALF ROUND

1 3/64" x 5/64"

(Not included in assorted set of 6)

Code: ZMBF2Z (cut 00)
ZMBF2 (cut 2)



Code: ZMAR2Z (cut 00)

1/4"

ROUND



ROUND

5/64"

Code: ZMBR2Z (cut 00)
ZMBR2 (cut 2)



Code: ZMAT2Z (cut 00)

7/32"

THREE SQUARE



THREE SQUARE

1/8"

Code: ZMBT2Z (cut 00)
ZMBT2 (cut 2)



Code: ZMAE2Z (cut 00)

7/32" x 5/64"

EQUALLING
(Cut 4 sides)



EQUALLING
(Cut 4 sides)

3/16" x 5/64"

Code: ZMBE2Z (cut 00)
ZMBE2 (cut 2)



Code: ZMAP2Z (cut 00)

7/32" x 5/64"

PILLAR
(2 safe edges)



PILLAR
(2 safe edges)

3/16" x 5/64"

Code: ZMBP2Z (cut 00)
ZMBP2 (cut 2)

PARALLEL MACHINE FILES-TYPE X

Cut on the Downward Stroke

Cut 00

Length of Cut: 3 1/2"
Length overall: 4 3/4"

Round Shank 5/16" dia.
lb. per doz. 3/4



SQUARE



5/16"

ZMXL2Z

OVAL



5/16" x 5/32"

ZMXO2Z

HALF ROUND



5/8" x 5/32"

ZMXF2Z

ROUND



5/16"

ZMXR2Z

THREE SQUARE



7/32"

ZMXT2Z

EQUALLING
(Cut 4 sides)



5/16" x 1/8"

ZMXE2Z

Parallel Machine Files — Types A, B and X available in assorted sets of 6

Code: ZMAS62Z Type A Set (cut 00)
Code: ZMBS62Z Type B Set (cut 00)

Code: ZMBS62 Type B Set (cut 2)
Code: ZMXS62Z Type X Set (cut 00)



PARALLEL MACHINE FILES / TYPE F

THE COMPLETE ORDERING CODE NUMBERS
ARE SHOWN FOR FILES ON THIS PAGE



Tension type for Acme, Ideal, High Speed and similar filing machines. Clamp ends of these tension type files are precision machined to assure accurate alignment.

Cut 00 (Bastard)

Cut 2 (Smooth)

WEIGHT PER DOZEN 4" AND 5" — 1/4 LB. • 6" AND 8" — 1 1/2 LBS.

LENGTH	FLAT	SQUARE	THREE SQUARE	ROUND	HALF ROUND	KNIFE	CROCHET
4" CUT 00 CUT 2		3/64" ZMF172Z ZMF172	3/64" ZMF332Z ZMF332	3/64" ZMF652Z ZMF652			
4" CUT 00 CUT 2					1/16 x 1/64" ZMF812Z ZMF812		
4" CUT 00 CUT 2	5/64 x 3/64" ZMF12Z ZMF12	5/64" ZMF182Z ZMF182	5/64" ZMF342Z ZMF342	5/64" ZMF662Z ZMF662	5/64 x 3/64" ZMF822Z ZMF822	5/64 x 3/64" ZMF1292Z ZMF1292	5/64 x 1/64" ZMF1452Z ZMF1452
4" CUT 00 CUT 2	1/8 x 1/16" ZMF22Z ZMF22					1/8 x 3/64" ZMF1302F ZMF1302	1/8 x 3/64" ZMF1462Z ZMF1462
5" CUT 00		1/8"" ZMF222Z	1/8"" ZMF382Z	1/8"" ZMF702Z	1/8 x 5/64"" ZMF862Z		1/8 x 5/64"" ZMF1502Z
5" CUT 00	5/32 x 5/64"" ZMF62Z						
6" CUT 00 CUT 2		5/32" ZMF232Z ZMF232	5/32" ZMF392Z ZMF392		5/32 x 5/64" ZMF872Z ZMF872	5/32 x 5/64" ZMF1352Z ZMF1352	5/32 x 5/64" ZMF1512Z ZMF1512
6" CUT 00 CUT 2	3/16 x 5/64" ZMF72Z ZMF72						
5" CUT 00	3/16 x 1/8"" ZMF92Z		3/16"" ZMF412Z		3/16 x 1/8"" ZMF892Z		
6" CUT 00 CUT 2	5/16 x 1/8" ZMF122Z ZMF122	5/16" ZMF292Z ZMF292			5/16 x 1/8" ZMF922Z ZMF922		
8" CUT 00 CUT 2	3/8 x 3/16" ZMF162Z ZMF162						
5" CUT 00	13/32 x 1/32"" ZMF5012Z						
6" CUT 00	5/8 x 5/64"" ZMF5032Z						

*Cut 00 (Bastard) Only

All weights given are for one doz. files.

PARALLEL MACHINE FILES TYPE E

For All American, Oliver, Milwaukee, Keller and similar filing machines. Cut on downward stroke

THE COMPLETE ORDERING CODE NUMBERS
ARE SHOWN FOR FILES ON THIS PAGE

Cuts 00 and 2 unless otherwise specified Length of Cut: 6" Length overall: 8"



 ROUND CUT 00 CUT 2	Code:	$\frac{3}{32}$ "	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "
		ZMER2ZC	ZMER2ZE	ZMER2ZJ	ZMER2ZQ	ZMER2ZZ	ZMER2ZH
		ZMER2C	ZMER2E	ZMER2J	ZMER2Q	ZMER2Z	★



 SQUARE CUT 00 CUT 2	$\frac{1}{8}$ "	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{5}{16}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "
	ZMEL2ZE	ZMEL2ZJ	ZMEL2ZQ	ZMEL2ZK	ZMEL2ZZ	ZMEL2ZH
	ZMEL2E	ZMEL2J	ZMEL2Q	★	ZMEL2Z	★



 PILLAR: CUT 4 SIDES CUT 00 CUT 2	$\frac{3}{16} \times \frac{1}{16}$ "	$\frac{3}{16} \times \frac{3}{32}$ "	$\frac{1}{4} \times \frac{1}{8}$ "	$\frac{3}{8} \times \frac{3}{16}$ "	$\frac{1}{2} \times \frac{1}{4}$ "	$\frac{3}{4} \times \frac{3}{8}$ "
	ZMEP42ZJB	ZMEP42ZJC	ZMEP42ZQ	ZMEP42ZZ	ZMEP42ZH	ZMEP42T
	★	ZMEP42JC	★	ZMEP42Z		



PILLAR: CUT 2 SIDES $\frac{1}{4} \times \frac{1}{8}$ "
CUT 00 ZMEP2ZQ



 CROCHET CUT 00	$\frac{3}{16} \times \frac{3}{32}$ "	$\frac{1}{4} \times \frac{1}{8}$ "	$\frac{3}{8} \times \frac{3}{16}$ "
	ZMEQ2ZJC	ZMEQ2ZQ	ZMEQ2ZZ



 THREE SQUARE CUT 00 CUT 2	$\frac{3}{16}$ "	$\frac{1}{4}$ "	$\frac{3}{8}$ "
	ZMET2ZT	ZMET2ZQ	ZMET2ZZ
	★	ZMET2Q	★



 HALF ROUND CUT 00 CUT 2	$\frac{3}{16} \times \frac{7}{64}$ "	$\frac{1}{4} \times \frac{7}{64}$ "	$\frac{3}{8} \times \frac{7}{64}$ "	$\frac{1}{2} \times \frac{11}{64}$ "	$\frac{5}{8} \times \frac{13}{64}$ "
	ZMEF2ZJ	ZMEF2ZQ	ZMEF2ZZ	ZMEF2ZZ	ZMEF2ZF
	★	★	ZMEF2Z	★	★



 CROSSING CUT 00	$\frac{1}{4} \times \frac{7}{64}$ "
	ZMEC2Z

● NOT AVAILABLE IN CUT 00
★ NOT AVAILABLE IN CUT 2

PARALLEL MACHINE FILES TYPE E

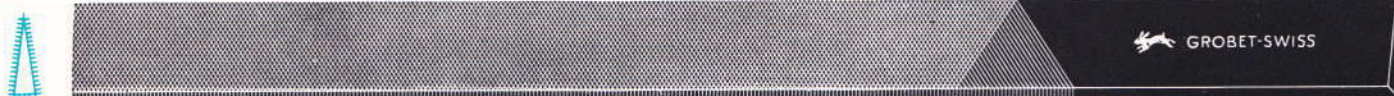
For All American, Oliver, Milwaukee, Keller and similar filing machines. Cut on downward stroke

THE COMPLETE ORDERING CODE NUMBERS
ARE SHOWN FOR FILES ON THIS PAGE

Cuts 00 and 2 unless otherwise specified Length of Cut: 6" Length overall: 8"



OVAL
CUT 00 Code: **ZME02Z**
 $1\frac{1}{32} \times \frac{5}{64}$ "



KNIFE
CUT 00 **ZMEK2Z**
 $1\frac{5}{32} \times \frac{1}{8}$ "



PIPPIN
CUT 00 **ZMEU2Z**
 $1\frac{1}{64} \times \frac{5}{32}$ "



EQUALLING **CUT 4 SIDES:**
CUT 00 $\frac{3}{8} \times \frac{1}{16}$ " $1\frac{1}{32} \times \frac{1}{8}$ "
CUT 2 **ZMEE2ZZ** **ZMEE2ZN**
ZMEE2Z ★



LOZENGE
CUT 00 **ZMEA2Z**
 $1\frac{1}{32} \times 1\frac{17}{64}$ "



CANT **CUT 3 SIDES:**
CUT 00 $\frac{3}{8} \times \frac{3}{16}$ "
ZMEG2Z

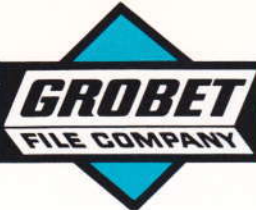
★ NOT AVAILABLE IN CUT 2

Assorted set of 12 — $\frac{3}{8}$ " cut 00 Code: **ZMEST2ZZ**

Round $\frac{3}{8}$ ", Square $\frac{3}{8}$ ", Pillar, Cut 4 sides $\frac{3}{8}$ " x $\frac{3}{16}$ ", Crochet $\frac{3}{8}$ " x $\frac{3}{16}$ ", Three Square $\frac{3}{8}$ ", Half Round $\frac{3}{8}$ " x $\frac{5}{64}$ ", Oval $1\frac{1}{32}$ " x $\frac{5}{64}$ ", Knife $1\frac{5}{32}$ " x $\frac{1}{8}$ ", Pippin $1\frac{1}{64}$ " x $\frac{5}{32}$ ", Equalling, Cut 4 sides $\frac{3}{8}$ " x $\frac{1}{16}$ ", Lozenge $1\frac{1}{32}$ " x $1\frac{17}{64}$ ", Cant, Cut 3 sides $\frac{3}{8}$ " x $\frac{3}{16}$ ".

Assorted set of 12 — $\frac{1}{4}$ " cut 00 Code: **ZMEST2ZQ**

Round $\frac{1}{4}$ ", Square $\frac{1}{4}$ ", Pillar, Cut 4 sides $\frac{1}{4}$ " x $\frac{1}{8}$ ", Crochet $\frac{1}{4}$ " x $\frac{1}{8}$ ", Three Square $\frac{1}{4}$ ", Half Round $\frac{1}{4}$ " x $\frac{5}{64}$ ", Oval $1\frac{1}{32}$ " x $\frac{5}{64}$ ", Knife $1\frac{5}{32}$ " x $\frac{1}{8}$ ", Pippin $1\frac{1}{64}$ " x $\frac{5}{32}$ ", Equalling, Cut 4 sides $\frac{3}{8}$ " x $\frac{1}{16}$ ", Lozenge $1\frac{1}{32}$ " x $1\frac{17}{64}$ ", Crossing $\frac{1}{4}$ " x $\frac{5}{64}$ ".



DIE SINKERS' REGULAR RIFFLERS

The Grobet File Company of America, Inc. is the one and only to offer so large a selection of Swiss precision rifflers. It is not necessary to compromise on a profile when you can get exactly what you need in a Grobet-Swiss riffler.

To Order: See instruction C, page 9

Rifflers illustrated are 6" long.



Also available in 7" length—Code: ZA805

Also available in 7" length—Code: ZA813

Lengths available in these Cuts:
6" — 0, 2, 4, 6 7" — 0, 2

Overall length: 6" 7"
lb. per doz.: ¼ ½

To Order: See instruction C, page 9

Lengths available in these cuts
6" — 0, 2, 4, 6 7" — 0, 2

Overall length: 6" 7"
lb. per doz.: 1/4 1/2

Rifflers illustrated are 6" long.



DIE SINKERS' REGULAR RIFFLERS

To Order: See instruction C, page 9

Lengths available in these cuts
6" — 0, 2, 4, 6 7" — 0, 2

Overall length: 6" 7"
lb. per doz.: 1/4 1/2

Rifflers illustrated are 6" long.



AVAILABLE IN SETS AS FOLLOWS:

(Please indicate cut following code)

Code: **ZA9S(cut)**

CUTS 0, 2 AND 4

Set of 24 Diesinkers' Rifflers, 6" long.
1 ea. ZA900, 901, 905, 911, 913, 919,
941, 955, 956, 957, 958, 963, 964, 965,
971, 972, 973, 974, 975, 981, 982, 983
988, 994.

ZA9SB(cut)

CUTS 0, 2 AND 4

Set of 12 Diesinkers' Rifflers, 6" long.
1 ea. ZA900, 901, 905, 911, 919, 955,
963, 964, 971, 975, 981, 994.

CUTS 0, 2 AND 4

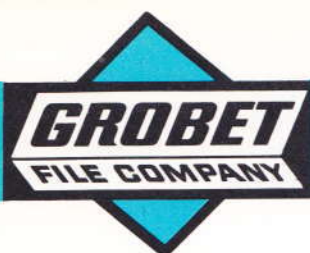
ZA9SA(cut)

Set of 18 Diesinkers' Rifflers, 6" long.
1 ea. ZA900, 941, 955, 956, 957, 958,
963, 964, 965, 971, 972, 973, 974, 975,
981, 982, 983, 994.

CUTS 0 AND 2

ZA8S(cut)

Set of 12 Diesinkers' Rifflers, 7" long.
1 ea. ZA805, 813, 855, 856, 857, 863,
865, 871, 875, 881, 883, 888.



WOOD RIFFLERS

THE COMPLETE ORDERING CODE NUMBERS
ARE SHOWN FOR FILES ON THIS PAGE

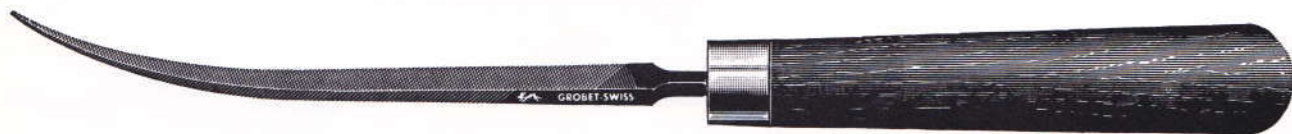
French rifflers or wood rifflers are used by cabinet makers and pattern makers.

Overall length: 7" || lb. per doz.: 1



Code: ZA5S Set of 8 Wood Rifflers.

BENT RIFFLERS HANDLED



Length of Cut: 3 1/2" || lb. per doz. 1/2

Three
Square Rasp



ZBRTR

Half
Round Bastard



ZBRFB

Joint Bastard



ZBRJB

Three
Square Bastard



ZBRTB

Round Rasp



ZBRRR

Hand Bastard



ZBRHB

Available in sets of 6 bent rifflers. Code: ZBR

To Order: See instruction C, page 9

Cuts 0 and 2

Length overall: 7"
lb. per doz.: $\frac{3}{4}$



CODE: ZA7S(CUT) Set of 20 rifflers shown on pages 28 and 29, available in cuts 0 and 2.

To Order: See instruction C, page 9

Cuts 0 and 2

Length overall: 7"
lb. per doz: $\frac{3}{4}$



Also available in Cut 3

ZA7SB (cut) Set of 12 Die Makers' Rifflers, 1 ea.
ZA711, 713, 731, 732, 741, 750, 761, 763,
764, 771, 781, 790

Available in cuts 0 and 2

To Order: See instruction C, page 9

Cuts 0 and 2

Length overall: 12"
lb. per doz: 2¼

NEW 12" OVERALL

Grobet File Company recently introduced this new group of 12" Tool Makers' Riffilers to round out the most complete line of Swiss Precision Riffilers available to industry anywhere in the world. These riffilers are made of chrome-alloy steel for long, efficient life and corrosion resistance. They are contoured to make difficult-to-reach areas readily accessible and are well-balanced to facilitate delicate finishing work.



Code: ZA4S(cut) Set of 10 Riffilers, 12" overall.



GRAVERS

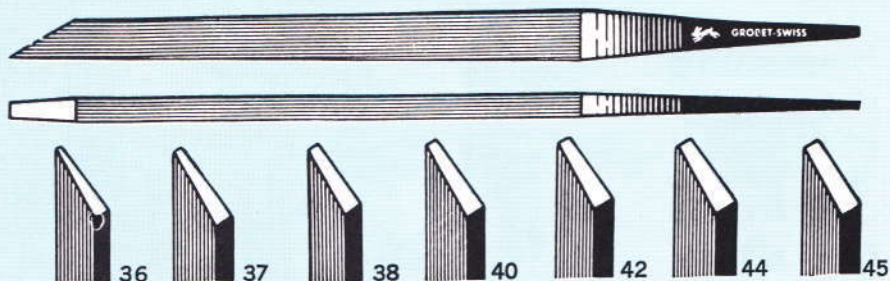
To Order: Follow examples below.

FLAT GRAVERS

Nos. 36 to 45

Code: **6GF** (graver no.)

Example: **6GF36**

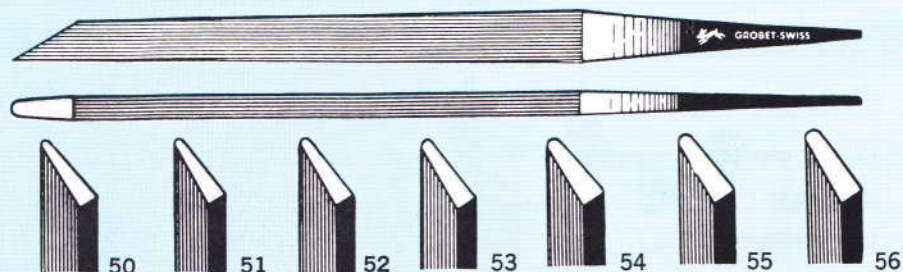


ROUND GRAVERS

Nos. 50 to 56

Code: **6GR** (graver no.)

Example: **6GR50**



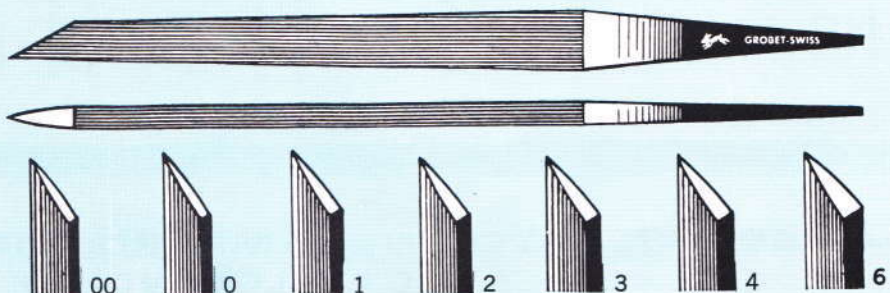
ONGLETTE GRAVERS

Nos. 00 to 6

Code: **6GP** (graver no.)

Substitute **ZZ** for **00**
and **Z** for **0**

Example: **6GP2Z**

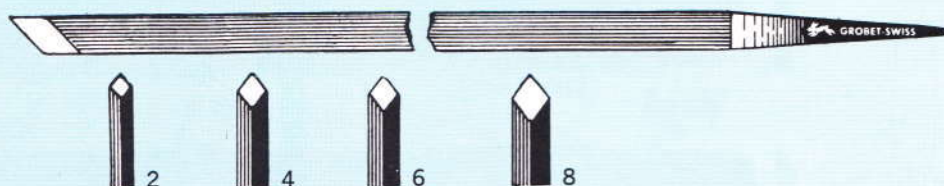


SQUARE GRAVERS

Nos. 2 to 8

Code: **6GS** (graver no.)

Example: **6GS2**

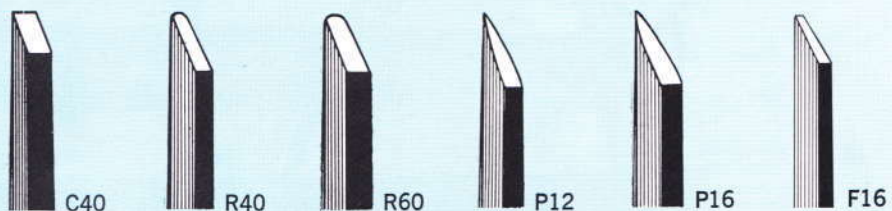


DIE SINKERS' CHISELS

Overall length: 6"

Code: **CZ6** (chisel no.)

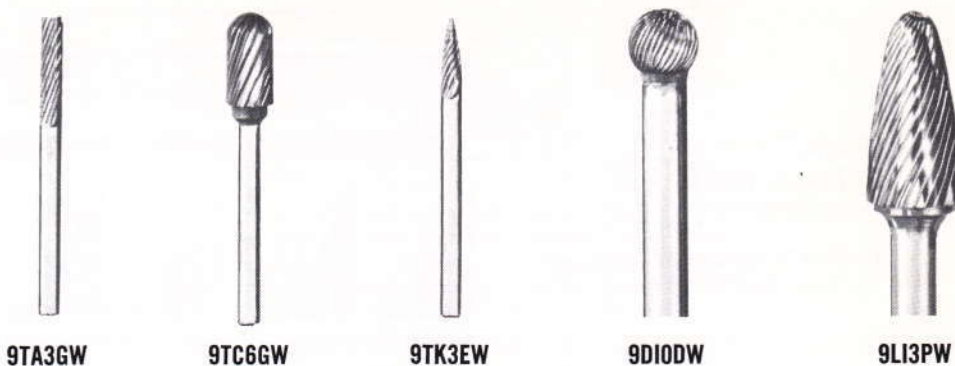
Example: **CZ6C40**



Available in assorted set of 6
Code: **CZ66S**

CARBIDE ROTARY FILES

CATALOG
NO. 61



9TA3GW

9TC6GW

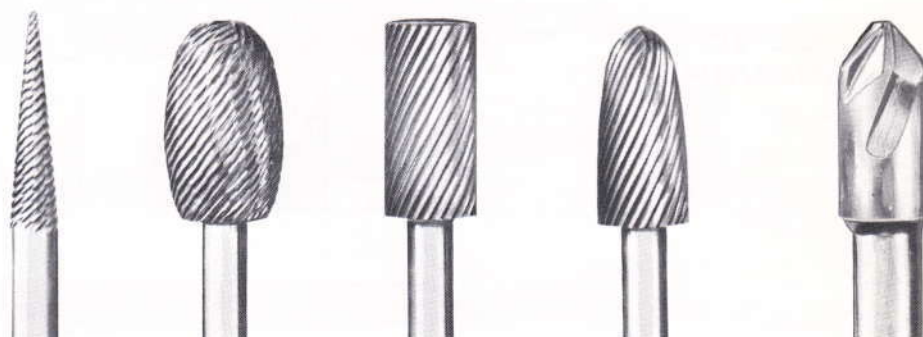
9TK3EW

9DI0DW

9LI3PW

HIGH SPEED STEEL ROTARY FILES

CATALOG
NO. 61



12005

11655

28073

28932

4GD41

AMERICAN PATTERN and MILLED CURVED TOOTH FILES CATALOG NO. 50

XF8B



XH10SC



XT6S



XK8B



XXFL10ST



**MINIATURE
BRUSHES**

**CATALOG
NO. 85**



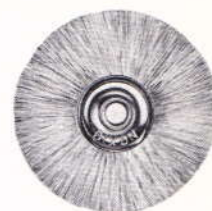
BR400



BR445S



BR443S



BR406

**DIESINKERS'
and
JEWELERS'
BURS**

**CATALOG
NO. 80**



BU6A5



BU6G6



BU6R4

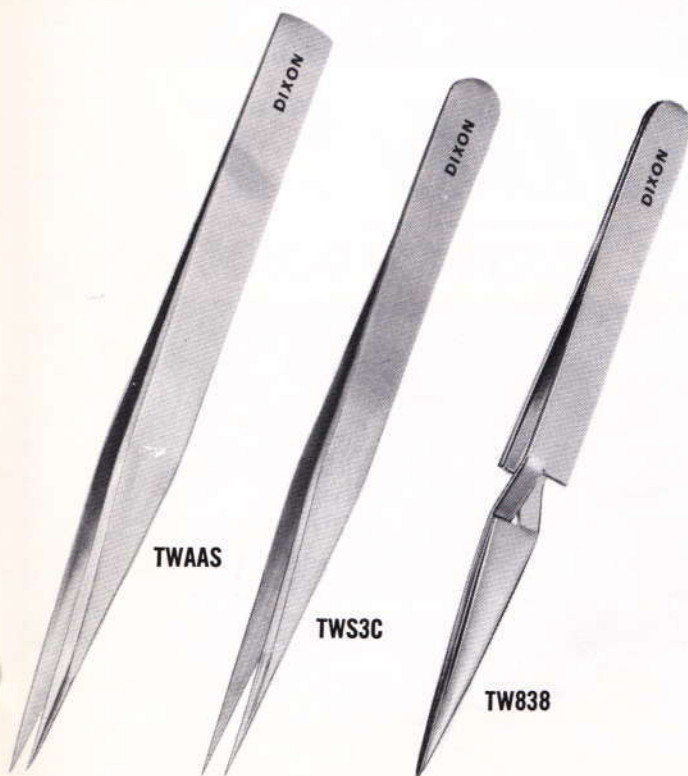


BU3P2

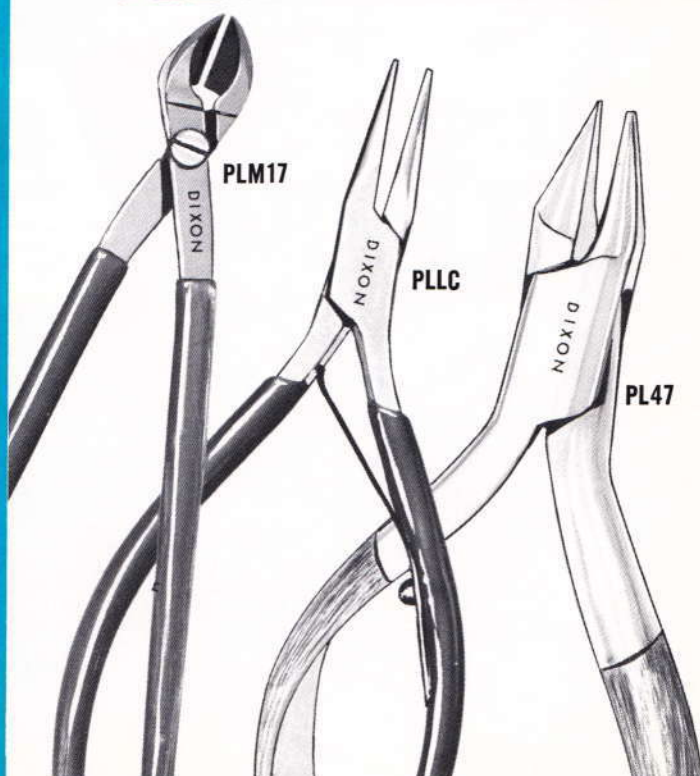


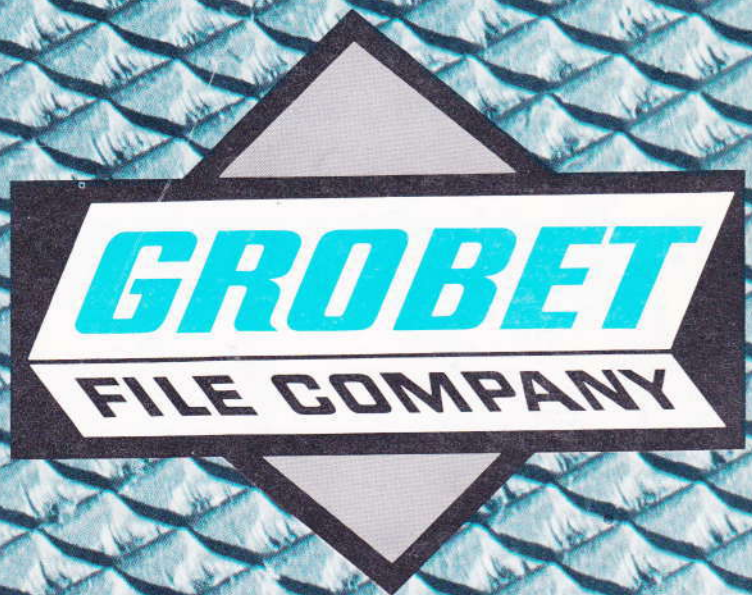
BU3C2

TWEEZERS • CATALOG NO. 70



PLIERS • CATALOG NO. 75





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